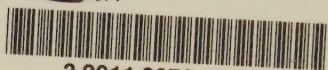


SYRACUSE UNIVERSITY

The new criminology;

10496231



3 2911 00701727 0

SYRACUSE

ERSITY

ARY



DATE ~~LOANED~~ DUE

24 Mar 61 KB

12/28

28 Apr 63 GN

7 May 63 GN

12 Aug 64 DS

~~11 JUN 1965 DWE~~

THE NEW CRIMINOLOGY

*The generations were prepared; the pangs,
The internal pangs, were ready, the dread strife
Of poor humanity's afflicted will,
Struggling in vain with ruthless destiny.*

—PARADISE LOST.

THE NEW CRIMINOLOGY

*A Consideration of the Chemical
Causation of Abnormal Behavior*

By
MAX G. SCHLAPP, M.D.

*Professor of Neuropathology at New York Post-Graduate
Medical School; Director of the New York
Children's Court Clinic*

and

EDWARD H. SMITH

*Author of "Con," "Famous Poison Mysteries," and
"Mysteries of the Missing."*



New York

BONI AND LIVERIGHT

1 9 2 8

SYRACUSE UNIVERSITY
LIBRARY

COPYRIGHT 1928 :: BY
BONI & LIVERIGHT, Inc.
PRINTED IN THE UNITED STATES



33n

HV

6035

S35

PREFATORY NOTE

THE reader seems entitled, in a collaboration of this kind, to a statement of individual responsibility. The medical and medico-criminal facts and theories herein set forth, the clinical cases cited, the conclusions as to the rôle of women in our present social dilemma, the endocrinological lore and the hypothesis of the chemical control of human actions are wholly the contribution of my confrère, and are based upon his wide practice and his long and profound study of the subjects. In these matters he is, accordingly, entitled to the sole praise or blame. On the other hand, whatever errors of general scholarship or of research and authorship may fret these pages are chargeable to me alone and I assume the fault with, I hope, a proper humility.

Again, it seems necessary to say that this work has been accumulating under my hand since 1919, when my collaborator first brought to my attention the materials and medical ideas which form the main substance of the book. This was, of course, some years before endocrines began to attract the first lay attention and long anterior to their popularity and début in the court room. Dr. Schlapp had then already been lecturing on, writing about and treating the ductless glands for a decade and more. He had outlined the chemical or glandular ideas now so widely accepted between 1904 and 1912 when he was in charge of the neuropathological department at Cornell University and had lectured on the subject before various medical and scientific bodies as a pioneer. Various articles which have appeared in scientific and popular journals and

PREFATORY NOTE

newspapers over the names of one or both of us have had their part in the more conservative education of the public in these matters. It seems hardly necessary to remark the original histological work and the investigations of the cortical areas in the Macaque monkey done much earlier in Germany by my co-author, since these are familiar to students generally.

While these chapters have been slowly growing into their present form, others have come forward with publications on related subjects which may strike some as similar. There is, however, no real conflict and the main features of this work are, it seems to me, wholly without direct anticipations, save those founded on our own occasional writing.

Again, while this writing has been in progress, the criminal problem has risen to unprecedented attention in the United States. More has been written about crime and criminals in the last two or three years than in the precedent generation. Unhappily this new voice of our ready criminologists has been stridently and vehemently reactionary. Their clamor—and that of the press—has been so great that legislatures are and have been busy grinding out regressive and barbarous acts, by which our emotional optimists evidently hope to solve a problem that has again and again failed to yield to such treatment. The only excuses for this mad perseverance in old error are, of course, ignorance and passion.

Thus, this work may seem a challenge thrown into the face of current trends and popular opinion. It was not so conceived, but if it has taken on some of the color of controversy, well and good. Some one must raise a protest against having one of the moving questions of modern biology and sociology swept back into the darkness of ruined penology and archaic law.

EDWARD H. SMITH.

CONTENTS

BOOK I

THE IDEOLOGICAL BACKGROUND

CHAPTER	PAGE
I. BEFORE AND AFTER FREE WILL	13
Early Criminal Law—The Church and Free Will—Early Mechanistic Theories—Varying Concepts of Crime—Man as a Mechanism—The Behaviorists—Crime the Result of Endocrine Imbalance.	
II. THE COLLAPSE OF THE PENAL SYSTEM	30
The Lex Talionis—Penology of the Ancients—The Witch Hunters—Witchcraft and the Scholars—Origin of the Prison System—The Failure of Ferocity—Efficacy of Present Methods—Fallibility of Penal Statistics—Cost of Coping with Crime—The Growing Crime Bill—A System Based on Ignorance.	
III. BACK TO LOMBROSO	54
Two Schools of Criminology—The Environmental Theory—Theory of Heredity—The Merit in Both Schools—The Weaknesses in Both Theories—A Biological Problem—Lombroso's Mistake—The Consequence of the Lombrosian Errors—Predestined Criminals—Where Lombroso Was Right.	

BOOK II

MENTAL DEFICIENCY AND CRIMINALITY

I. CELLS, GLANDS AND MEN	77
Chemical Reaction of Cells—The Human Mechanism—The Energizing Stimuli—A Chain of Machines—Chemical Imbalance and Disease—Functions of the Endocrine Glands—The Endocrines and Their Hormones—Effects of the Hormones—The Pituitary and its Hormone—Influence of the Interstitial—Types of Glandular Sufferers—The Obvious Inference.	
II. THE FAULTS OF THE MOTHERS	103
The Old Reverence for Deformity—Deficients and Defectives—Results of Gland Treatment—The Cause of Gland Malformities—Glandular Imbalance in Mothers—The Causation of Monogolism—The Supporting Evidence—Subnormal Criminals.	

CONTENTS

III.	MODERNITY AND WOMANKIND	120
	The Increase of Abnormality—Modernity and Womankind—New York Statistics—Increased Longevity an Error—More Nervous and Mental Maladies—The Strain of Modern Life—Results of Women's Activities—Gland Maladies in the Female—Children of Disturbed Mothers—Mongolians and Epilepts—Freaks in Healthy Families—Various Causes of Decadence—Immigrants' Children.	

IV.	MENTAL DEFICIENTS AS CRIMINALS	147
	The Low-witted Types—The Brute Criminal—Complex Types—A Moron Example—The Mistaken Popular Opinion.	

Book III

THE INTELLIGENT CRIMINAL

I.	ACTION VERSUS REACTION	163
	Taxis and Tropism—Heliotropic Phenomena—The Evolution of the Brain—Nerve Centers That Control Action—Primitive Nervous Systems—Development of the Cortex—Man and His Reactions—The Brain Processes—The Wasp Myth—Mating and Tropism—The Imperative Nervous System—Tropisms in Man.	

II.	THE MECHANICS OF BEHAVIOR	188
	Functional Disturbance and Glands—Machinery of the Brain—The Intellectual Mechanism—The Intellectual vs. Emotional—Reaction Point in the Nerve Cells—Influence of the Endocrines—Defective Emotionalism—A Murder Concept—The Storing of Concepts—Environment and Concept—The Scientific Emotion in Scientific Sense.	

III.	EMOTIONAL CRIMINALS	211
	A Girl Bandit—Menstruation and Kleptomania—Sex Aberration and Shoplifting—A Rich Thief—A Male Emotional—Result of Treatment—A Pluriglandular Defective—Early Emotional Symptoms—Correctness of Glandular Diagnosis.	

IV.	MURDER AND DISEASE	231
	Medicine and the Law—Moronism and Cunning—The Epileptics—The Richeson Case—The Emotional Defective—The Sadist—"Passional Crimes"—What Frustration Can Do—The Effects of Drugs.	

V.	PROGRAM	257
	The Difficulty of Change—Scientific Procedure—The Need of Research—A Social Laboratory—The Causes of Past Failures—A New Attitude—Release After Complete Cure—Recommitment Upon Relapse—Fear and Deterrence—Cruelty in Prisons—Prejudices of Judges—Jury an Anachronism—The Need for Medication—The Exaltation of the Unfit—The Treatment of Children—The Democratic Shibboleth.	

CONTENTS

APPENDICES

A. SOME VICISSITUDES OF FREE WILL	291
The Pelagian Controversy—Semi-Pelagianism—The Fall of Port Royal—Protestantism Adopts Augustinianism.	
B. A NOTE ON THE LAW	299
Mansfield's Definition—The American Attitude—Insanity under United States Laws.	
C. STATISTICAL	307

Book I

THE IDEOLOGICAL BACKGROUND

The NEW CRIMINOLOGY

CHAPTER I

BEFORE AND AFTER FREE WILL

To will is to have to will.

—EMPEROR AND GALILEAN.

THE chief question to be approached in this book is whether man in general and the criminal man in particular can be, as Henley innocently phrased it, the captain of his soul or master of his fate. The disputation is hardly a novel one, since it has raged in many strange and some exquisite disguises, through the ecclesiastical councils and academic halls of more than twenty centuries and plumed itself upon the pages of nearly all post-Nazarene philosophers. Yet there is justification for its late revival and it will be found in the accumulation of fresh evidence through the extension of scientific understanding.

As the human study of humanity has advanced out of the antique mists into the sometimes painful light of experimental investigation, the doubts as to individual freedom and responsibility have slowly grown more insistent. The various sciences which deal with the mentality or behavior of the genus have for more than two generations been piling up data of a character openly contradictory of the honored acceptances. Still more recently, there have been made discoveries and demonstrations in the field of physiology which appear so definitely subversive of the established conceptions as to suggest the need of a complete transvaluation. It is to set them forth and adduce the evidence of their soundness that this writing is undertaken.

The immediate pertinence to the problems of criminal law and penology of any fresh understanding of human conduct need hardly be stated. In this zone of investigation it must again be admitted that a questioning of responsibility is no new thing. Inseeing minds have felt for some hundreds of years an instinctive suspicion and the whole structure of modern scientific criminology is based upon the ascription of felonious deportment to the operation of forces beyond the individual control. But the evidence upon which these assumptions of the criminal students are based has in the past been sketchy. It has been sufficient to convert the philosopher and researcher but it has not been able to make much progress against popular and professional conservatism. Accordingly, it is obviously a matter of importance if further and more specific data can be shown which not only confirm the older suspicion but serve to extend and clarify our knowledge in this territory and may provide the basis for a practical scientific method of handling the thorny criminal problem.

The need of progress in this direction will be apparent when we realize that the change that has taken place in the general and legal attitude toward the criminal since the twilight of barbarism has been no more than an alteration of mode. The picture of Tiglath Pileser flaying his enemies alive is æsthetically hardly more atrocious than the modern visions of men swinging from the gibbet against the morning sky or of shackled outcasts roasting in the electric chair. And socially or ethically there is no distinction apprehensible, for both measures are founded on the primitive mire of retaliation.

Unfortunately the criminal law proceeds, in spite of many pretensions and hypocrisies, almost entirely upon the retaliatory theory, far as it may be removed from reason and intellection. The judge who deals out what are termed condign punishments probably does not stop to trouble his conscience with the thought that what he does is based upon processes both savage and instinctive. He has the authority of usage

at his back and need not bother with analyses. Yet a little reflection might give him some healthy discomfort.

The dog snaps at the stick or stone that wounds it—a mere reflex of pain. The savage man similarly revenged himself on the foe that injured him and early society, basing its customs on the experiences and habits of the individual, soon formulated this animal reflex into law. Private vengeance, blood feuds, clan feuds, trial by battle and similar practices formed its legal institutions. Individuals or groups were considered to have been injured by the act of the culprit and it became the duty—perhaps the privilege—of the aggrieved man or clan to exact retribution or to inflict punishment, usually death.

With the gradual centralization of power through the absorption of clans into tribes and tribes into nations, this right of punishing passed into the hands of the chief, the shaman, the priest, the prince and the state. There were, accordingly, readjustments in the modes of judging and executing, but the underlying concept remained unchanged. Questions as to the motives of the lawbreakers were as yet little considered and the tormenting problem of responsibility had not entered into the ethical calculations of races still much too sorely occupied with the problems of sustenance and security.

Indeed, the general question of man's freedom of action, the problem of volition, does not seem to have agitated the human mind until what may now be called a comparatively late day in historical times. Sumerian, Babylonian, Egyptian, earlier Persian and Assyrian religious and legal literatures contain no direct reference to these matters. Apparently these peoples, too, proceeded on the notion that man is free to do as he will and subject to punishment if he does amiss. The proposition was considered self-evident and in no need of stating, far less of investigating. The Bible contains no mention of free will or volition but the Testaments everywhere proceed on the assumption of freedom, responsibility and the justness of punishment.

Greek religion, as must be sufficiently familiar, rested on a

curious blend of fatalism and Olympian caprice. Men were pursued by furies because they had committed various breaches of the human law or were condemned by the Fates because they had offended some light-minded deity, whose wish was often enough in direct conflict with that of some other celestial. Crime and punishment were alike matters of destiny.

The earlier philosophers, too, seem to have been blissfully untroubled by the notion of inflictions upon humanity for the infirmities and miscreancies of omnipotent gods. Socrates is, at last, vaguely interested in the matter but without granting it any direct or extended consideration. He is some sort of a determinist. Plato has only the most tenuously connected references to the question. Aristotle is inclined to be a libertarian but his ideas on volition and responsibility, even as fantastically renovated and perverted by the monkish writers of the Middle Ages, are meaningless to moderns.

The later Stoics and Epicureans finally began to see the problem. The Epicureans were inclined to identify will with chance and Epicurus himself specifically denies that the divinities bother themselves with superintending the actions of human children. Chrysippus, the Stoic, made an interesting if absurd attempt to bring together the idea of responsibility and the doctrine of determinism, as then understood, upon the cloth of reconciliation. He performed some astounding tricks of ground and lofty casuistry, which serve only to amuse the man who cares to explore him. Carneades took another slant and tried to prove, by arguments of grotesque subtlety and maze-like involutions, that a certain freedom of choice did exist. But, whatever their conclusions, the later philosophers of Hellas had begun to lucubrate over this perplexity.

Even Roman Law was affected as it made careful provision for the exclusion of the insane from the usual legal punishments. Three types of irresponsible madmen were recognized, the *demens*, *furiosus* and *fatuus*, which terms may be rendered, the demented, the maniacal and the idiotic.

Nevertheless, the terrifying question whether the will of man is free or determined caused only a very small ripple in the sea of antique thought. Yet it is this matter about which the main ferment of modern criminal jurisprudence and criminal medicine seethes and foams, however cleverly our doctors evade the issue in most of their public pronouncements.

The disputation did not, no one needs to be told, first grow hot in the field of criminology. The fact is that the fat was thrown into a vehement fire as soon as the Christian churches began to organize, in the fourth century. The new faith was still younger when followers of the Galilean first began to ask themselves about the human freedom of choice in conflicts between good and evil, and the correlative question of punishment in case the will were not free. Stated simply, the problem was whether man ought to be held responsible and punished on earth and in hell for his frailties, if the deity was all-seeing, just and omnipotent. For all of a dozen centuries the fathers and doctors of the church, the saints and the excommunicated, the scholastics, the humanists, the Jesuits, the Calvinists, the Arminians and countless others struggled over this Gordian knot. The churches finally cut it with the perhaps inevitable conclusion that though the heavenly Father was all knowing and all powerful, He did not interfere in mundane matters to the extent of hampering the human will or controlling the decisions of the individual. One must feel that this was an ecclesiastical rather than a theological decision, since its difficulties are considerable, not the least of them being the tacit negation of the efficacy of prayer. Be that as it may, the decision was in favor of free will and responsibility, and in this the later metaphysical philosophers concurred.¹

Such an outcome was, naturally, convenient for princes and states and the laws they supported. It made the whole question of crime and punishment simple and gave the established prac-

¹ Some notes on the history of the conflict between libertarianism and determinism in the church will be found in Appendix A.

tice a fresh odor of spiritual authority. If men were free to choose between good and evil they were likewise able to refrain from crime and all other breaches of the law, and it was therefore logical, just—and necessary—to punish them, here and hereafter.

On this approved theory all modern criminal law is founded. Here and there a rare judge, who has taken counsel with his own doubts, proceeds to interpret and apply the medieval law according to some faint radiance from the scientific candle. But even our treatment of the patently insane is hardly an evidence of intellectual progress on the part of our lawmakers, since it is nothing more than a regression from the horrible brutalities of the Middle Ages, the Renaissance and the earlier Modern Times, to the better understanding and surer humanity of the Greeks, Romans and other ancients.²

To the modern mind all this pother of theologians and lawgivers is a little bewildering. Yet at no great distance of time not only the religious and the legal minds but the best intelligences of the day rejected the notion that man is a mechanism like other creatures and insisted on considering the human being to be quite differently constituted from other forms of life. In addition to a body and a brain, such as nature had provided for other creatures, lordly man equipped himself with a mind, which was supposed to be an exclusive possession or, at least, vastly different from the highest animal mind. Also a soul, which was his single endowment, though just what this soul was or where it was situate no one seemed to know. Descartes located it in the pineal gland. Almost in the same breath he struck a blow for modernity when he declared that animals were machines or automata, propelled and actuated by nothing more than physical and chemical forces. His predecessors had considered the brutes as fully responsible as men for their acts and made a practice of placing domestic and wild animals on

² Ives, "History of Penal Methods"; Tuke, Chapters in the "History of the Insane."

trial for such offenses as murder, putting to death with solemn ceremonies those that were convicted.

It was not long, however, before the human animal came to be fixed with all others in the mechanical classification. Boyle affirmed that the human body was a curious and elaborate machine and de Lamettrie carried the mechanistic theory to its fullest conclusions, as his chief work, "*L'Homme Machine*," will testify. Voltaire and Robinet,³ following the ideas of others who had now long been associating the activities of the brain with those of the body, arrived at the full determinist position and proclaimed the various and devastating free-will paradox: "The question is not whether we can do what we want to do but whether we can will what we want to will." When Huxley, following the illuminations of Darwin, and the earlier considerations of Hume's Phenomenalism, proclaimed his celebrated and storm-ridden theory of epiphenomenalism, the case for the mechanistic view of the functioning of the brain, as well as of the body, seemed complete.

The bearing of all this on the problem of criminality is clear enough; yet before we can go much further it is needful to make some observations about the criminal and his act. What is a crime, for instance? Who is a criminal? The ordinary definitions will serve well enough in the former case and they may even be somewhat narrowed for the present discussion to include only flagrant breaches of the important or well established laws of any given society. Similarly, when we come to define the criminal, we may smile over the aphorisms of the popular paradoxist and recognize that the greatest criminals go unpunished and frequently pass to honor and preferment without thereby admitting anything that is ultimately important. The fact that the shrewd killer, the great thief or the bloody conqueror upsets the ordinary procedure and defies the legal machinery is of social, judicial or legislative, rather than of scientific, interest.

³ J. B. R. Robinet, "*De la Nature*."

Nor do we need to concern ourselves immediately with the thought that hosts of men now considered martyrs or reformers were, to the institutions and powers of their times, indubitable criminals. When, later on, we see that the criminal is, broadly, a man ill adjusted to his environment, we shall recognize the affinity between revolters and innovators and the ordinary felon. We shall see that men of these various and ethically disparate groups suffer in common from a lack of emotional control and we shall also note that the man who commits crimes on a grand scale or, as the saying goes, within the law, is one better adjusted to the conditions and forces about him or strong enough to control them.

Nevertheless, it is essential to understand how crimes came to be defined and criminals marked out from their fellows. The probability is—and we must deal in probabilities because too much of the story of early human life will always remain mysterious—that, as soon as men began to gather in groups, it became necessary to make some rough definitions of proper conduct. The fact that the inhibitions which must have been the first controlling rules of savage men exist also among many animals indicates that the earliest laws were formed out of necessity and by slow growth, rather than through any intelligent foresight or understanding.

Thus men who hunted in the same pack did not kill one another except in sexual rivalries such as mark the behavior of most animals, including the higher mammalia, man's nearest relatives. Men in these vague dawn associations probably did not steal from one another and made some attempt to divide the spoil of the hunt and the battle equally. But neither the rule against killing nor that against thieving can have applied to other groups of men. And we may be certain that individuals in the same little clan frequently broke the laws. They committed offenses against other individuals—torts, in the legal phrasing. And it was almost certainly the rule that the injured brother was permitted or expected to be avenged

in kind. The evidences of this are too familiar to need stating.

Probably it is not even necessary to remind the reader that killing and thieving were ancient practices when the first prohibitions were formed, such acts being, to be sure, in no sense criminal until the laws came into being. In other words, the act is older than the crime.

As human societies became more firmly established, the freedom of the individual was further restricted in the interest of the group or clan. Out of these social groupings came another body of controls or taboos, founded on early magic and perhaps on more rationally conceived needs of the societies. Breach of taboos, violations of the totem, sacrilege, sedition, revolt and treason are familiar instances of such offenses.

Different tribes had different notions and rules, according to the peculiar forms of magic and religion prevalent in various parts and parcels of the earth, to the local special needs, to the climatic influences, to the chemical make-up of the people and much more. Hence, in the happy days of the present, bigamy, which is a most detested form of felony in the United States and most of Europe, will be seen to be a meritorious act in numerous eastern lands. Brigandage, which we punish with most extreme penalties, is still considered an act of manly prowess among Albanian and Kurdish hillsmen and many others. One would probably have his difficulties trying to convince the Malayan sea rovers that piracy is a crime. It is merely something to which the pestiferous white man takes emphatic exception. And even killing is by no means outlawed. Is it not a glorious thing to slay one or a hundred total strangers in the cause of embattled democracy or royalty or religion or liberty or tyranny or beneath the banner of any petty government that may be set up anywhere? Moreover, such killings as occidentals call wilful murder are still the custom, even a pious custom, in many parts of our world——not only in the savage recesses of the African or Amazonian hinterland and lonely atolls of the western ocean, where our culture is a

thing of recent penetration—but in parts of classic Italy and islands of the fabled Mediterranean that knew the glory that was Greece. And, for scores of centuries after the first groups of men had forbidden the killing of their membership, man-slaying was not only no crime but an act of religious significance, hedged by an involved ritual and attended by a most strange æsthetic exaltation. We speak of human sacrifice and head hunting.⁴ Investigators have, in fact, pointed out that an almost incredible variety of strange moral and legal notions and usages has been in force over the earth's face at various times by gone.

A paragraph of Winwood Reade's makes sufficiently clear the manner in which our conceptions regarding crimes against property have been similarly evolved and changed to suit times, places and conditions:

"A god's moral disposition, his ideas of right and wrong, are those of the people by whom he is created. Wandering tribes do not, as a rule, consider it wrong to rob outside the circle of their clan; their god is therefore a robber like themselves. If they settle in a fertile country, pass into an agricultural state, build towns and become peaceful citizens with property of their own, they change their views respecting theft, and accordingly their god forbids it in his laws. . . ." ⁵

Or we may recall the drastic paradox of Brissot de Warville:

"The thief in the state of nature is the rich man, the man who has a superfluity; in society the thief is he who robs the rich. What a complete transposition of ideas!"

But long ago a few fundamental types of crime, namely, offenses against the person, the property and the state or society, became recognized evils and their punishment by severe inflictions the almost worldwide rule. To commit mur-

⁴ Sir J. G. Frazer, "Totemism and Exogamy"; W. J. Perry, "Children of the Sun," and the various writings of G. Elliot Smith and many others.

⁵ "The Martyrdom of Man," London, 1872, and many subsequent editions.

der, assault or rape, to rob or steal and to betray one's ruler, country or chief—these are offenses which have been sternly forbidden for so many generations that the normal and self-contained man does not even think of committing them, great though the temptation may be at times. In the dim past these acts were as natural and normal as they are now unnatural and abnormal. The change has been brought about by long habitude to social restraints and the constant inculcation, from generation to generation, of civilized ideas, until in men of higher culture the primitive "instincts" have been all but extirpated. The degree to which this end has been attained depends on the maturity and to some degree upon the quality of the civilization.⁶ For instance, though it seems certain that cannibalism was not at one time the virtually universal practice, the white European never reverts to it except under the press of some strange and deep madness or in such extremities as shipwreck, where the instinct of self-preservation breaks down his civilized inhibitions. In various parts of Oceania, Africa and South America, on the other hand, the recrudescences to man eating are known to be common enough. In our case, culture—which is to say changed habit—has had time to get in its work. In lately converted tribes, the generations are

⁶ The libertarian may object that this very change from the natural primitive custom to an artificial civilized law in direct opposition to the former habit is a clear exhibition of conscious choice and free will. Nothing is more apparent, however, than that such changes take place gradually and in response to necessity, rather than out of any process of ratiocination or volitions. It is, of course, a fallacy to set down one set of customs as natural and the other as artificial. The human mechanism is itself adaptive. It relates itself to changed environment and changes its habits according to the deeper evolutions. What may have been natural in the Stone Age would most emphatically be unnatural to-day. This is not because men have willed it so but because gradually evolved environment has changed the whole complexion of life. One has only to observe the emotional waves, the storms of popular feeling out of which most modern laws are born to see the process of custom changes at work. And if one wishes to observe the reverse process one has but to look through legislative history and note the laws passed in response to temporary tides of feeling and long grown moribund or dead.

still too close to old customs, deep rooted and slow to yield to humanizing innovations.

The practical upshot of all this is the conclusion that civilized man has now been long enough habited to social conduct and far enough removed from primitive conduct to have made *abstention* from these forbidden acts his normal method of behavior. More than that, we must conclude from all the evidence that conformity to present law and custom in general is the normal attitude and, hence, that gross law breaking and criminality constitute abnormal behavior. With this view practically all schools of modern thought are now in accord. It is true that the psycho-analysts and other psychological schools incline to the theory that outbreaks of brutal criminality among civilized populations are atavistic returns to primitive instinct. That criminality is not the result of an atavism but a pathological condition resulting in abnormal behavior will be one of the themes of this work. Whether the more advanced psychologists would find any serious fault with this phrasing of the case is doubtful.

Certainly there will arise the critic with the worn observation that we all violate some laws or that if all men's deeds were known we should all inhabit the prisons and jails. There is little profit in disputing these sweeping judgments, but even the admission of their truth means little. The wide prevalence of law breaking seems to be explicable on the ground of the multiplicity of laws, the rapidity of fresh lawmaking, the recent invasion of long established rights and customs with sumptuary legislation, rather than upon any theory of general criminal inclination. We may also reason, in defense, that the laws constantly violated by the mass of humanity are just these innovations of the code to which the world has not yet got used. Most of us do not kill or steal.

If, then, criminality is to be explained as abnormal behavior the instant question looms: What is this abnormality and how does it operate? We are immediately thrown back to the

original postulate of the human body and brain as a mechanism, reacting automatically to physical and chemical forces.

It is no light matter to offer to man in the pride of his regency over the animate world a dose so strange and humiliating. He has for too many centuries been taught to look upon the virtues of his heart and the rare fine elevations of his soul as the products of his conscious and untrammelled will, gifted by God and controlled only from heaven, if at all. He feels that he has been made to bear slings and arrows for his mistakes and misdeeds and now is brought to the cruel irony of accepting all that is good and pure in him as the work of a machine over which he has no authority. The thrill of music, the eloquence of poetry, the color and feeling of art, the involutions of philosophy, the achievements of invention, the uncounted feats and marvels of this dread devastating science itself—are these nothing more than the output of some dull and irresponsible machine? The average man so perturbingly confronted will find ready sympathy with the fabulous Englishwoman who remarked that Mr. Darwin might be descended from the apes if he liked, but not she.

The mechanistic theory can probably not hope to arouse in the minds of simple men any feelings save resentment and incredulity. Are we to believe that a mere engine, be it never so subtly fashioned, can know the sting of ambition, the spur of desire? Can an engine see, feel, think? What is the nature of this so-called mechanism that can exult and despair? Can a machine suffer and pity? Can it aspire? Can it love? Preposterous! ⁷

The reader can be asked only to suspend judgment, meantime remembering that man in his few centuries of sapience has been able to contrive mechanisms which have given him the mobile abilities of such stranger creatures as the fish and the bird, that some of his machines create energy, have a sense of

⁷ For a modern and detailed study of the human machine consult Dr. Crile's "Man an Adaptive Mechanism."

touch and musical modulation, have the power of speech, the strange ability to transmit sound through vacant space, the magical property of determining the gases burning upon stars too distant for any imagining of their human creator; remembering also that nature is possibly a much more dedal artisan than her highest creature. The great mother of all living has been at work countless millions of years upon her machines. With the tyranny of Time for her ally, she has had infinite hours for her labor, constructing everything from fly traps to Pleiades. Perhaps if we can muster enough detachment and impartiality we may yet be overtaken by the discovery that she consummated her mechanical wizardry in the fabrication of our noble selves.

Again, while it may not mean much to the layman, the fact is that scientists have now generally accepted this view and been working toward the discovery of the inner secrets of life from this point of approach.

There has, to be sure, been a great disparity of views. Until fairly recent times many mechanists have assumed some special motivating or spiritual force. This blending of the spiritualistic and mechanistic doctrines has resulted in some strange hypotheses regarding the human brain or mind. In recent years a great deal of valuable clinical work has been done, first of all by the psychiatrists and secondly by the psychologists⁸ and especially by the psycho-analysts. The last have investigated thousands upon thousands of cases of abnormal behavior, studied the world of dreams and fantasies, contributed something to the science of psychiatry, collected and codified immense amounts of material and formed a theory covering the activities of the mind or, as they prefer to say, the psyche.

When, however, the psycho-analyst comes to tackle the fundamental problem of abnormal behavior he lapses into a sad metaphysic. What must ultimately be explained in the terms

⁸ We do not mean mentality testers.

of physics still dwells with him in a metaphysical world. His explanations are modal instead of causal; he deals in symptomatology rather than in etiology. He belongs, in other words, to the passing school. He leans as far in one false direction as does the Behaviorist in another. The latter, with his rejection of racial differences and inherited capacities, his grotesque notion that memories are carried about in the muscles of the throat, chest and arms, and his pretty idea that we think with our musculature, is quite too ridiculous. Much as we are inclined to the behavioristic insistence on the physical base of all things, these absurdities are just a little too crass. But behaviorism is still new and pardonable, whereas psycho-analysis is mature and needs to be rated for the evil it does.

Let us choose, for example, part of a paragraph taken at random from the first volume of Dr. Wilhelm Stekel's ambitious and industrious work, "Peculiarities of Behavior." The citation will be found on page 259 in a discussion of kleptomania, a subject that will be dealt with later at length. Dr. Stekel, who is one of the chief exponents of the psycho-analytic theory, says:

" . . . But it is an open question whether any impulsive acts are other than sexual. I mean that in every instance a connection with sexuality is traceable. Many of the older writers, belonging to the pre-analytic period, have pointed out that women yield to the kleptomaniac tendency mostly during the menstrual period or while pregnant. . . . We know that the female organ is sexualized during menstruation as well as during pregnancy. In that state the sexual impulse may be yielded to more readily. Wagner von Jauregg also emphasizes that among women kleptomania breaks out more frequently at the time of menstruation and during the gravid state. Lacqueur, who is chiefly concerned with store kleptomaniacs, also points out the organic background of the tendency, and in many cases he considers it an actual sexual toxicosis." . . . etc.

It must be plain to every reader that such explanations are

themselves in need of explanation. They are no more than one set of symbols to explain another. What, for instance, is sexual toxicosis? And, granting the well-established fact that menstruation has its distinct influence upon the kleptomaniac tendency, how is this to be explained in physiology? This volume will attempt to shed some more definite light, without the need of hypothesis or metaphysic.

The deadly symptom in all this psycho-analytic business sticks out in its use of terms. It has had to invent for itself a whole new vocabulary, to resort to most doubtful symbolism and most fearsome locutions. This is one of the fatal stigmata of metaphysic, this absence of lucidity and employment of exotic and sesquipedalian words. Said Hobbes: "Words are wise men's counters; they do but reckon by them; but they are the money of fools."

The whole question narrows down to a very simple proposition: Shall we investigate and interpret the activities of the human brain according to the laws of material science, those laws under which science has achieved all its manifold and manifest triumphs, or shall we invent for this single subject a set of special and unprecedented rules and terms? If we conclude, as we must, that the universal and thoroughly established laws of nature obtain in the case of the human brain as well as in action of the human heart or liver, then we are limited to the interaction of Force and Matter. It is such an interpretation and explanation of the brain's function and consequently of abnormal behavior that the present volume pretends to set forth. Its authors have chosen the subject of criminal conduct for their special demonstration, hoping to establish that such aberrations from the norm of conduct as we call crime are explicable under pathology, that there is in fact a Criminal Imperative, an inner drive which impels these forbidden and extraordinary human acts, and that this drive is to be completely accounted for under physico-chemical laws.

We shall attempt to demonstrate that the vast majority of all

THE RESULT OF ENDOCRINE IMBALANCE

criminals, misdemeanants, mental deficient and defectives are the products of bodily disorders, that most crimes come about through disturbances of the ductless glands in the criminal or through mental defects caused by endocrine troubles in the criminal's mother. The attempt will also be made to show that criminal actions are in reality reactions caused by the disturbed internal chemistry of the body.

Certain exceptions must be noted, namely:

Criminality due to trauma (injury of the vital parts of the nervous system).

Criminality due to psychoses (insanity).

Criminality due to extrinsic poisons (drugs).

Criminality caused by intrinsic poisons (toxic infections).

Criminality of epileptic causation.

Criminality of the true hereditary type.

To what extent the wills of men so afflicted are free we shall, let us hope, shortly understand and understanding this perhaps at last find a light shining into the darkness of the prison and a flush on the gloom of the gibbet. Possibly it will then be clear why criminality has grown and expanded in every part of the world and why all the methods of the past, for all their indurate inhumanity and hopeless ignorance, have failed and must fail.

CHAPTER II

THE COLLAPSE OF THE PENAL SYSTEM

"Must crimes be punished but by other crimes,
And greater criminals?"

—MANFRED.

MODERN criminal jurisprudence proceeds on the basis of three specific assumptions: that the offender must be punished; that this punishment will somehow reform and redeem him; that it will at the same time deter him and his similars from further frailties. Behind these ideas lurks the fundamental purpose of our legal and penal program, an abstraction generally referred to as the defense of society.

The ironist is naturally tempted to remind us that this is a somewhat uncertain and controversial end or to ask pointedly which society and what part of society is defended. But these uncomfortable objections may be put aside as not immediately pertinent and the direct questions raised, about which revolves the whole criminological argument:

Are the juridical acceptances true? Does the present system produce the results it so boldly boasts? To what extent is the protection of the body social accomplished?

The answers involve a judgment of success or failure upon the whole scheme of laws, courts, penalties and prisons and a decision for or against the entire prevalent range of ideas dealing with the anti-social conduct of humanity. An attempt to formulate these answers and suggest the probably correct judgments must be one of the underlying designs of any work dealing with criminality.

In arriving at the proper conclusions, consideration must be given to the history of our penal methods and the sources out of which they have come. In this respect we shall find no

pleasant reading and no food for optimism. Though men have at times looked upon maniacs with veneration, upon idiots with superstitious awe and upon wholesale assassins with bending admiration, the common transgressor of laws and customs has everywhere been treated officially with violence and aversion. There have always been sentimental dissenters from this course, but they have altered the general attitude even less than they do to-day.

Force, whatever its destructiveness and eventual futility, has always been the most direct means to an end. It is thus not strange that men hold and have held doggedly to the notion that he who does violence to our beliefs, our scheme of life or our ordinances must be treated with violence. The argument that one cruelty, though committed in the name of a sovereign or people and disguised under all the fantastic drapes of official mumbo-jumbo, can hardly be considered to right another and constitutes, in fact, a crime to match a crime, must be recognized as modern and of no wide acceptance.

In the Mosaic code of the Jews and the *lex talionis* of the Romans, the modestly literate man still finds the congenial ideas of retaliation and vindictiveness which immemorial practice has made to seem logical and inevitable. If Steinmetz¹ and other investigators have traced these ideas back to savage animism and sympathetic magic, and if many others have remonstrated against the crudeness and illogic of meting out to offenders graduated doses of punishment which, having been endured, are considered to square accounts with society, such attitudes belong to the scholar and theorist and have failed to make any ponderable impression upon the race. Our faith in force and fury remains unshaken.

History, it is true, has been repeatedly invaded by heretics and humanist teachers whose precepts have here and there been erected into religions, but the followers of these men have invariably discarded the doctrines of humility and pity for

¹ "Ethnologische Studien zur ersten Entwicklung der Strafe."

that of force as soon as they found themselves numerous and powerful. We speak of the practice and not of the pretension. What the ruinous prophet of Silberblick termed a *Sklavenmoral* has always been agreeable to the weak and abhorrent to the strong, who desire to exult in the exercise of their strength.

The present authors, lest there be misunderstanding, are concerned with neither violence nor pity, except in so far as these historic attitudes must enter into their considerations as background. The program to be presented here has no connections with sentiment. Its claims are purely scientific and pragmatic. Its objects are the amelioration of suffering as a social measure, the reduction of taxation, the restoration of many social aliens to their normal places in the world and the transformation of innumerable dependents into useful and productive social units. As a matter of fact, we hope to expound a means of protecting the strong against the weak and the weak against themselves, much as that may ring of paradox.

With this made clear, we may begin to survey the progress of penal methods from the beginning.

Steady searching has failed to discover a time when punitive measures were not employed against offenders. Private vengeance came first. It was followed by a system of trials by ordeal, torture, death for slight offenses, enslavement, banishment, ostracism and the like. Indeed, early chieftains and princes would appear to have devoted a great part of their energies to devising ingenious and terrible methods of punishment. There have been, to be sure, constant bits of progress and regress. The penal system of Egypt, for instance, seems to have been much milder in nature than that of contemporary Babylon or later Assyria. The Greeks, as might be guessed, were somewhat constrained to humanity in their treatment of all but the slave classes and were most long-suffering in their attitude toward the elect, though even Socrates knew the hemlock. Apparently every society has the penal system as well as the criminals it deserves for Rome, trying in everything to ape

the Greeks, presents a different picture in spite of the outward seeming. A study of the comparative methods of the two great peoples of European antiquity will prove rewarding to the interested student.

Yet not even that overflowered and declining Rome of the crucifixions, the arena and the living torches quite matched the ingenious cruelties achieved in our own late Middle Ages and the first centuries of modern times. Here again, as in the contest over free will, the struggles and pangs of religious difference showed the way, as every page of medieval history and the relics in many gruesome museums will attest. It cannot be said that the idea originated in Christian times, but it seems beyond dispute that our not too distant forebears brought to its bloodiest flower the strange belief that torture and punishment of the grotesque and maniac sort must be efficacious in the great work of bringing men closer to true faith and true lawfulness.

In order to have some accurate grasp of the measures men have taken against criminals, always either out of savage revengefulness or the belief that cruelty was a cure for something or other, let us take some furtive glances into the history of punishments.

Criminals in Pergamus at the time of King Attalus and in Pontus at the time of the great Mithridates, were handed over to the court physicians for experiment, sometimes to test the power of poisons and often for the demonstration of crude surgery.

The Apostle John is said to have been present at the execution in the forum at Ephesus of two criminals by means of corrosive poisons.²

At the time of Ptolemy Soter in Alexandria, six hundred condemned criminals, many of them convicted of offenses which would now be considered minor, were handed over to Erasis-tratos and Herophilus, pupils of Chrysippos of Cnidos, for vivi-

² Pierre Fabre, "History of the Apostles."

section. "They opened the abdomens of some of these men to study the movements of the colon and those of the muscle of the diaphragm on the inspiration of air; they also opened the chests of the others to study the cardiac movements."³ Celsus and Galen seem to have assumed the duties of our modern anti-vivisectionists and protested vehemently.

In tenth and eleventh century England, under the Saxon and Norman kings, common criminals were mutilated in various ways, blinded, branded, amputated of feet and hands and let crawl about the country as a warning to others. William the Conqueror decreed such punishments with great particularity.

Five hundred years later, in Tudor times, we look for but find no advance. Boiling alive was the punishment for poisoners and burning at the stake the penalty paid by traitors, by a wife who killed her husband and by a servant who killed his master or mistress.

And this atrocious law was not repealed until 1790 when the great fickle lamp of democracy was already shining over the earth.

Under Elizabeth a bankrupt was likely to be publicly scourged through the streets at the end of a cart, his tongue split, his nose cut off, his eyes put out, his property dispersed and he himself finally hanged. And in late Georgian times forgers were usually hanged, a celebrated case having been that of the Rev. William Dodd, one of the most fashionable preachers of London, who had signed the name of his benefactor and friend, Lord Chesterfield, to a note. One must recall, with what sardonics he can muster, that forgery and bankruptcy seem not to have been ended by such measures.

"An instance appeared in a *Times* paragraph—18th January, 1801—which tells how a certain Andrew Branning, a luckless urchin aged only thirteen, had broken into a house and carried off a spoon. Others were with him but they ran

³ C. J. S. Thompson, "Poison Mysteries in History, Romance and Crime."

away and only he was captured and brought to trial. His story ended in two words which were short and customary: Guilty—Death.”⁴

These pages of horror mean little enough by themselves except that they show to what lengths humanity or inhumanity has gone in the attempt to justify the doctrine that criminality can be driven out of the soul of man by torture and violence or by some other method of force. Sin, heresy, demons and possessions were once exorcised in this same way. Indeed, there is a very close connection between the methods for centuries in use against criminals and those employed again and again against dissenters, infidels, distraught old women, alchemic experimenters, religious innovators and the like. The connectives between these two fields are not alone historical but psychological, pathological and physiological.

Choosing the instance most familiar and nearest at hand, we turn to the witch trials and persecutions of the fifteenth, sixteenth and seventeenth centuries. No historical student needs to be told that Europe was in the grip of tremendous emotional disturbances at this time—the Inquisition, the Reformation, the Thirty Years’ War, the Renaissance, the discovery of the New World, confirming as it did the Copernican view of the universe, the struggle between England and Spain for control of the newly found and colonized empires beyond the seas, the endless minor wars on the European continent, the stirring of the scientific spirit, all contributing to the furiously rapid change of environment and the consequent excitation and disbalance of the peoples. As a result there were, all over Europe, many nervous, erratic, mystical, neurasthenic and neurotic people, many more insane than usually, all kinds of strange new religious sects and fulminations; in fact, the complete symptoms which have attended these emotional upheavals of the populace in all the stressful hours of world history.

Out of this situation, along with other strange phenomena,

⁴ George Ives, “History of Penal Methods.”

came the witches and their persecutors. No intelligent person now living in the world but understands the horrible and grotesque error of these huntings, brandings, torturings and executions of innocent defective human beings, the helpless victims of their own Zeitgeist.

We understand to-day that it is a cruel and ignorant practice to torture men and women whose mental disturbance expresses itself in the form of religious or other eccentricities, but we are still too deep in darkness to realize that the same is true of those whose quirks show themselves in criminality. It may be, after all, that our superiority over our not too distant ancestors is a very spotty and superficial one. If Martin Luther recommended that a twelve-year-old demented or defective boy be drowned in order to drive the demons out of him and cleanse his soul for heaven—the learned, truth-seeking, error-snooping Luther!—we need feel no extravagant superiority since we send our defectives to the gallows and the prison, year after year.

Accordingly, we will do well to examine the story of witch torturing and of the now obvious monstrous error of those times in a humble and studious manner, seeking to learn from that dismal picture some truths about our own errancy. There is always the tendency to believe that such horrible blunders must have been confined to the vulgar and ignorant. Do we not recall that before the witch hunting reached its climax Shakespeare had already passed from the world with his "Pardon's the word to all," that Bacon had sunned himself in the lofty pronouncement, "I thought myself born to be of advantage to mankind" and that he and Descartes had shared the honor of founding modern scientific thought? Surely, then, the intelligentsia were not captivated by this dreadful myth? Lest we stray further into the darkness, here is a paragraph from Cobham Brewer's "History of Miracles":

"Take a far better case, that of witchcraft in the Middle Ages. Even Bishop Jewell believed in it. Glanvil, the ecclesi-

astical writer, one of the founders of the Royal Society, wrote a book to prove, 'Philosophically, theologically and historically' that it is a sterling fact. Montesquieu was a believer in it. Addison and Blackstone only half doubted, and thought that such a power might have existed at one time. Pope Innocent VIII published, in 1484, a bull charging all true Catholics to search out and put to death 'those who practiced magic, sorcery, witchcraft and enchantment.' Alexander VI (in 1494), Leo X (in 1521), and Adrian VI (in 1522) supplemented the bull of Pope Innocent; and, to come nearer home, the Scotch assembly, between 1640 and 1649, passed no less than five Acts against witches and wizards, each one more stringent than the former. In fact, history teems with delusions, and neither talent nor integrity, rank nor education, piety nor single-mindedness, religion nor law, nor all of them combined, have proved a safeguard against them."

And, lest one mistake the position of even later men, and dissenters into the bargain, we must recall that as late as 1782 John Wesley wrote:

"With my latest breath will I bear testimony against giving up to infidels one great proof of the invisible world: I mean that of witchcraft and apparitions, confirmed by the testimony of all the ages."

The passage may be found on page 366 of the Journal he edited. He likewise, as Lecky reminds us, declared that giving up witchcraft is in effect giving up the Bible.

What these witch persecutions, so highly esteemed by the founder of our most militant sect, amounted to may be seen from another passage in Ives' "History of Penal Methods."

"The readiness with which all evidence was acclaimed and the appalling means by which it was got together placed any abnormal person in constant peril and will account for the enormous numbers of the implicated. Tens of thousands of victims, says Lecky, perished by the most agonizing and protracted torments without exciting the faintest compassion.

In a single German city they used to burn three hundred witches annually. In Nancy eight hundred were put to death by a judge in the course of sixteen years. Zachary Gray, who edited an edition of 'Hudibras,' claims that during the long Parliament five hundred witches were executed each year and that he read through a list of no less than three thousand of them. The total of Great Britain has been estimated at thirty thousand and it has been estimated that during the sixteenth and seventeenth centuries the witch death-roll for Europe reached two hundred thousand people."

"The doctors, theological and legal," says Ives in closing his chapter, "erred in their diagnosis, mistaking disease for devils and abnormality for magic. We shall come upon this again, crass and close at hand. May the future condemn the present as we deplore the past."

As a matter of accuracy, many of the same unfortunates whom the witch hunters and demon exorcisers were burning in the seventeenth century are being condemned to prison in the twentieth.

One is tempted to repeat with Voltaire, "*Erudimini, qui judicatis terram!*"

Respecting these prisons a very common mistake is made. Because lords and monarchs from the earliest times had dungeons and keeps in their palaces or castles and the powerful priesthoods of antiquity also had strong chambers of stone and brick in which political offenders, hostages and rivals for power were confined, it is generally assumed that imprisonment as a punishment for law breakers is an ancient institution. As a matter of fact, Europe began to build jails in walled cities about the year 1000, for the purpose of detaining accused men until they could be tried. It was not until about two hundred and fifty years afterwards that prisons were erected and incarceration looked upon as a mode of punishment. Therefore we may view the experiment of immurement

as a punishment for and deterrent of crime as having extended over a period something short of seven centuries.

During a greater part of their earlier history in Europe, prisons were used for confining debtors, minor miscreants, persons of quality who had broken the laws and were not subject to the rigorous punishments reserved for the lowly, political offenders or those more or less temporarily out of countenance with the crown and its favorites, as in France before the Revolution, and various other gentry not in these days looked upon as criminals, whereas such offenders as now grace our state's prisons went by short and precipitate paths to the headsman's block or the gallows tree—men, women and children, murderers, burglars, traitors, forgers, bankrupts, swindlers, witches and wizards, petty thieves of spoons and loaves of bread, all indiscriminately. And this system was not finally abolished until well along into the nineteenth century, the English penal code having, for instance, at the very end of the eighteenth cycle still retained an even one hundred and sixty offenses on its list as capital crimes.

Papal and state prisons existed in Rome and other parts of Italy in the late seventeenth and early eighteenth century.

In the United States the British system was followed. Though jails and prisons existed in early settlements, more reliance was placed upon corporal inflictions, torture and the death penalty. It was not until the time of the Revolution that the first movement began for the relegation of the extreme punishment to use in cases of a limited and abhorrent kind and it was a little later that prisons were projected and built as houses of punishment, though William Penn had planned such a system a century earlier.⁵ It is apparent, then, that the prison system as we understand it to-day belongs within the confines of the last hundred and fifty years.

With the initial admission that prisons cannot be abolished

⁵ Lewis, "Development of American Prisons and Prison Customs," Albany, 1922.

overnight and must be retained as a transitional method of social protection until complete new organizations and equipments have been provided, we must declare at once that the system is no more than a part of the old error, doomed to rock upon its faulty foundations and to collapse in time. The immurement of men behind high walls was as much an admission of the failure of older retaliatory methods as a concession to the advancing spirit of humanity. While beating, disfiguring, branding, torturing, maiming and killing men assuredly met the first specification of the legal program, carrying the ideal of punishment to its logical limits, these inflictions somehow failed to achieve that deterrence which the early British kings and their contemporaries in other lands had set down as one of the objectives of the law. Crimes persisted in spite of punishments, as they do still, and it was decided that some new method must be tried. Locking the known criminals behind bars for protracted periods seemed to promise better results. And such a change of modes involved no abandonment of the vindictive and punitive principles which were and still are considered indispensable.

There was, when the prison system was inaugurated, as yet no suspicion of the fact that violent and dramatic inflictions upon criminals are often incitive and likely to achieve the exact opposite of their intended end through the powerful effects of suggestion upon the mass psyche. The plan of striking terror into the heart of evil-doers by public exhibitions of the law's ferocity was by no means given up. Executions became fête days. The populace found them quite as exciting and amusing as prize fights and bull stickings. One sees in memory the satirical pictures of London's pickpockets plying their ancient trade among the fascinated gentry at Tyburn, while one or more fellow sneak thieves were being translated to the higher life by the dual beneficia of prayer and strangulation, or the gay flotillas in New York harbor which bore the avid crowds to the hanging of Pirate Hicks on the site of Liberty's statue.

But if contemporary observers noted this phenomenon they were not able to divine the explanation and much water and blood flowed under the bridges before it began to dawn upon even the elect that not only the exciting exploits of criminals but also the more striking inflictions of punishment upon them, especially when attended with publicity of any sort, are likely to be followed by emotional upheavals and imitative offenses among the unstable elements of the population. Even now this fatal flaw in the deterrent workings of the penal system is only dimly apprehended and grudgingly accepted.

The failure of the older methods in the field of individual reformation had also something to do with the adoption of prisons and immurement as punitive substitutes. When the death penalty was still being inflicted for almost every sort of offense against the laws, the apologists for the reigning system found themselves in serious difficulties when they tried to square the practice with the vaunted ideal of reforming the transgressor. Unless one cared to think of the salutary effects of mortal wrath as transcending the grave, the lopping off of heads or dangling at the end of ropes was hardly a mode of redeeming men from their criminal tendencies, and so the sarcastic humanitarians urged in many a bitter polemic. Hegel, for one, met this objection by declaring that legal punishment was designed not to reform the culprit but to make a solemn affirmation of the violated principle,⁶ which pronouncement will stand for some as perhaps the most imposing of all obscurations of the savage rule of retaliation. Naturally such subtleties and evasions could not stand against the satire of critics and the obvious failure of corporal punishment and other violent methods. The prison seemed to offer hope.

What the extent of the disappointment has been we know. From the very beginning it was observable that men came out into the open air again after terms of incarceration and went back to their old practices or to worse ones. Out of this

⁶ G. W. Hegel, "Encyclopedie der philosophischen Wissenschaften."

circumstance grew a whole category of schemes, plans, systems, methods and theories, in fact the whole reformatory practice as it is to-day and as it has been. To bolster up the disappointing results of imprisonment the western nations tried and are trying the lash, the dark cell, industrial education, schools, prayer, religious guidance, prisoners' relief work, suspended sentences and probations, contingent or partly indeterminate sentences, moral precepts, parole, confinement at hard labor, confinement in idleness and even protracted solitary confinement, all in the hope of "reforming" human beings.

Relative to the last named method a few bitter words from Ives are of special significance:

"The reformation-by-solitude theory was then hailed on all sides as the Magna Charta of prison management. Once make prisoners think and they will forthwith see the error of their ways. The broken down, the cretinous, the neurotic, the unbalanced, once made to think, were somehow to solve all the terrific problems of disease and environment; repent, and so save themselves.

"That the governing classes, the sound, the privileged and the prosperous, should pause and reflect—that they should really consider the root-causes of crime, and really try and mean to make an end of them—was a remedy too revolutionary and uncomfortable to be even dreamed of throughout those selfish, drunken decades of the nineteenth century!"

It is indeed a strange fact that, in all this long span, when all branches of science were striding as never before in man's scores of millennia, when medical science was making undreamed advances and the race came by understanding and application of the physical laws of nature to a very genuine sovereignty over its world, the judges, the lawmakers and the official penologists failed to guess, even, that the reasons for failure in the handling of criminals lay in their own backwardness and ignorance. It would seem almost incredible that, after centuries of torture, violence, repressions and nameless bru-

talities, alternated with preaching, moralizing and sentimentalizing, not one of these "practical" criminologists ever guessed that the reason their charges did not reform was that they could not reform, having been by nature deformed in brain and mind.

There is no space here to go into the matter of prison barbarities and experiments. Those who are interested will find below a list of books by those better versed in this foetid subject.⁷

If we have seen the older systems of punishment fail, one after the other, to redeem the criminal from his errancies or to deter men from the commission of crimes, what shall we say of the methods now in vogue? Do we find criminality decreasing, by any chance? Do we find our states at last able to divert some of their treasure and their energies from this ancient problem to other pressing preoccupations? Are we making any progress at all? Let us abandon all other methods of approaching these questions and confine ourselves to a consultation of facts such as may seem above the limits of doubt.

The question of penal statistics will be the first to vex the investigator here. The results of the various census enumerations in the United States have frequently been quoted by writers, but the census office itself is the first to attest their misleading character. The enumerations of 1850, 1860 and 1870 were made on a basis and within limitations that render them next to useless for comparative purposes. The 1880 count took in some factors and excluded others which render

⁷ See Dostoievsky, "Souvenirs de la Maison des Morts"; Steinmetz, "Die Entwicklung der Strafe"; Wilde, "De Profundis"; Griffiths, "Secrets of the Prison House," "Memorials of Milbank" and "World's Famous Prisons"; Lowry, "My Life in Prison"; "Penal Servitude," by W. B. N., London, 1903; "The Prisoners of St. Lazare," Am. Ed., New York, 1872; Webb, "The American Prison System"; Hopkins, "Wards of the State"; Kropotkin, "Memoirs of a Revolutionist" and "Russian and French Prisons"; Berkman, "Prison Memoirs of an Anarchist"; Fishman, "Crucibles of Crime"; Morrell, "The Twenty-fifth Man," and especially, for cruel modes of punishment in all countries, see Heindl, "Berufsverbrecher," Berlin, 1926.

it also not strictly comparable and something of the same sort may be said of the roll taken in 1890. Since that time a uniform method has been followed so that it is possible fairly to compare the number of convicts and the total of commitments for the last three enumerations, 1900, 1910 and 1920. The investigator will find, however, that the figures show nothing worth noting. It is not possible to say from them that criminality has made any great gains. It certainly has not fallen off.

The point is, however, that all statistics are worthless or of doubtful value in this field because of factors beyond mathematics. If we try to reach any conclusions from the average prison populations for a given year or decade we come at once upon matters which throw us into deepest confusion. We discover that judges, when the prisons are full or overcrowded, tend to sentence the fewest possible convicted persons to incarceration. When larger facilities have been provided the courts resume wholesale commitments. Since crowded penal institutions have been a problem in a good part of our states for twenty and more years, this fact has a strong bearing.

One of the most widely recognized factors tending to minimize the value of penal statistics is the question of term lengths. It must be immediately apparent that if the average length of prison terms in one decade was ten years and in the next only five years, the first decade should show about twice as large a norm of prison population as the latter, since discharges would be slower by one-half and the commitments would continue to pile up just as rapidly as under the latter situation.

Speaking broadly, we may assume a general tendency to shorter prison terms in the last fifty years. Criminal and historical students seem to agree that the average impositions of courts in the country as a whole have been considerably lowered. If this can be demonstrated it must follow that prison populations should, other things being equal, have fallen off. However, we are again on rather perilous ground here,

for in many instances there has, in more recent years and in special localities, been a strong drift to reaction. In numerous states, for instance, the crime of burglary against banks is punishable by sentences of from forty years to life and there have been efforts to have banditry and burglary of certain types classed as capital or life-term offenses without discretion of the courts. Other matters might be cited, such as the periodic high sentences for bandits, kidnappers, rapers, arsonists and others. He who can pick his way through all this tangle and tell us whether the average convict to-day serves more or less time than his father or grandfather will perform a great labor and a worthy service.

The much abused parole laws also play their part here, as do the laws providing for time allowance to prisoners showing good conduct while confined.

Again, in this generation, large numbers of criminals and offenders formerly confined in prisons and other penal houses have been diverted to insane asylums, homes for the feeble-minded, institutions for epileptics, juvenile protective homes and other places not coming under the head of penal institutions. These, too, must have cut heavily into the more recent totals of prison population.

The matter of judicial and jury attitude is another factor. No one needs to be told that the temper of courts and juries varies according to time, place and circumstances. With the crime wave agitation in full voice, many an unfortunate fellow is sent up who might escape if the "public" were not "aroused," and many another fellow who would ordinarily be let off with a year or two, is angrily shunted away for twenty, thirty or forty years. In many states, again, the most obvious and crass crimes seldom lead to prison—lynchings and shootings in which the unwritten law is pleaded in the South, murders growing out of liquor wars and gang feuds in seaboard communities, border states and the great cities.

What effect on the general totals such special and local situa-

tions may have these writers do not attempt to judge. They are, however, not satisfied with the argument that the vagaries of one period will be found to balance those of any other.

Finally, there is the matter of new and strange laws and the numerous imprisonments arising out of them. One has only to note that there have been tens of thousands of extra jail and prison terms served since the inauguration of the liquor laws to get an idea of the force and scope of this factor.

Statisticians have usually argued that the total number of commitments in the succeeding census enumerations offers a surer basis for comparative studies, and this is true, but with distinct limitations. The point made is that the commitments are not affected by the variations in the length of terms. Even this is not an absolute truth, for juries frequently acquit where the penalty is extremely heavy and convict where it is lighter for the same offense. But there are graver faults to consider.

The suspended sentence, which has become extremely popular all over the country in the last fifteen or twenty years, has undoubtedly cut deeply into the total of commitments and, hence, into prison populations. The related method of probation by the courts has had the same effect, as has the growing employment of fines as a mode of punishment. And some of the factors mentioned above as affecting the prison totals naturally operate here also, the fullness of penal houses, the diversion to asylums and hospitals, the number of new laws and of offenses growing out of them.

Out of this intricate and confused picture only one certain impression can be got, namely, that the factors tending to keep down commitments and prison populations seem more numerous and more potent than those on the other side. Indeed, there are many students of the problem who will say that shorter terms, parole, probation, suspended sentences, fines and the sending of many abnormal felons to other than penal institutions are the whole explanation of the facts that the census figures show no marked increase in criminality, in spite

of the broad impression that crime is now much more prevalent.

This impression, let it be said, is not hysterical. Neither is it, as some have stated, the result of augmented interest in crimes on the part of the yellow press. The thoughtful and unemotional citizen has too many sound facts at hand to be charged with mere vamping. He knows that constantly greater prisons are being erected and that the needs are out of all proportion to the rise in population. He knows that appropriations for penal institutions have been rising steadily, again much more rapidly than the number of citizens and taxpayers supporting them. He knows that he is paying for more and more courts, which seem to be ever busier with criminal cases. He has but to look at the official records to see that the appropriations for police protection have risen at a staggering rate in all parts of the nation. And if he has any further doubts he has but to consult the reassuring census bulletins to discover that the number of policemen in the country has increased more than three times as fast as the population, and their pay in an even worse ratio.

This is by no means all that greets the investigating eye. But enough has been indicated to show that the idea of a greater criminal problem or menace is not necessarily founded upon air or ink and paper.

But is there any accurate way of judging whether serious and broadly recognized crimes—not such new or temporary offenses as highway misdemeanors owing to automobile or liquor law violations due to sumptuary laws—are more numerous now than formerly, our national growth considered? Are we committing more murders, burglaries, forgeries, embezzlements, thefts, hold-ups than formerly?

The police figures may be thrown aside at once as of no value. Every succeeding police chief has them prepared to justify his acts and methods. Every political party has them distorted to meet the needs of local situations. One administration enforces the laws sternly, arresting every criminal

in sight. Another runs an open town, paying little attention to the acts of professional criminals, even on occasion protecting them, so long as they commit most of their raids afar or stay "within reason."

There are, however, more reliable compilations and computations. In 1917 Mr. Raymond T. Bye, basing his calculations on the United States mortality tables, arrived at the conclusion that homicide happened in the ratio of 7 to the 100,000 population or about 7,000 for the country, population being then about 100,000,000. In 1923, five years later, estimates made for the Prudential Insurance Company of America⁸ showed more than 10,000 homicides to a population of about 110,000,000. The 1925 calculations of the same authorities fixed the homicide total at about 12,000 for the year, against a population probably lower than 115,000,000. Thus the homicide ratio would seem to have climbed in eight years from 7 to nearly 11 to the hundred thousand of inhabitants.

In considering property crimes, the calculations made by the insurance companies which write policies covering their holders against the commoner forms of larceny, such as embezzlement and burglary, offer most complete and illuminating material. Figures on the total losses paid because of the crimes of embezzlers are at hand from 1906 to 1925, over a period of twenty years, and similar burglary statistics over the period from 1913 to 1925, or thirteen years.

In 1906 there were twenty companies in the United States writing fidelity policies covering embezzlement losses. The total risks for that year were, according to Mr. William B. Joyce, chairman of the board of the National Surety Company, who has courteously supplied these figures, about one billion dollars. In 1923 there were fifty companies writing such policies and their total risks, according to the same authority, were about 5 billion dollars. Accordingly, if criminality had shown neither increase nor decrease in the period between 1906

⁸ By its statistician, Dr. F. L. Hoffman.

THE GROWING CRIME BILL

and 1925, the losses paid by all these companies should have multiplied just five times. The alarming facts will be apparent from the following table:

YEAR	LOSSES PAID	YEAR	LOSSES PAID
1906	\$1,603,769	1917	1,921,388
1907	1,251,430	1918	2,473,385
1908	1,901,650	1919	3,704,717
1909	2,104,718	1920	4,406,923
1910	1,871,028	1921	8,672,024
1911	2,513,514	1922	9,308,503
1912	2,236,036	1923	10,311,258
1913	2,123,546	1924	12,141,011
1914	2,008,347	1925	12,033,417
1915	2,128,239	1926	14,038,009
1916	1,866,785		

It takes very little calculation to see that the losses had increased about seven and one-half times between 1906 and 1923 and more than ten times over the low year 1907. In proportion to the amount of insurance written they should have increased five times, showing, once more, a considerable net rise in criminality.

In the field of burglary the losses paid have increased with even more astonishing rapidity, as the figures show:

YEAR	LOSSES PAID	YEAR	LOSSES PAID
1913	\$1,298,588	1922	10,601,358
1918	2,964,790	1923	10,601,448
1919	5,660,305	1924	13,025,121
1920	10,189,853	1925	13,310,957
1921	11,500,000		

Here again the total of risks taken has increased very largely. The total risks for 1923 were, according to the same insurance officials, about five and one-half times as great as those for 1913, but the losses paid were eight and one-half times as great. The reader must remember that these figures

THE NEW CRIMINOLOGY

include only the losses covered and paid by insurance and these represent only a very modest part of the total. Mr. Joyce, for instance, estimates that only about 8 per cent of the total losses through embezzlement are secured by policies in the various surety and fidelity companies.

If such figures strike the casual student of criminality with something of a shock, he is destined to still greater humiliation when an attempt is made to estimate the total economic loss, the complete cost of crime in the United States. For a number of years one of us has taken the lead in the gathering and collating of statistics and estimates on this subject, some of which have been published from time to time in technical and popular journals and newspapers. It must be admitted at the outset that most of these figures are no more than estimates, but they have been made with great care and conservatism and are based upon the material, data and opinions of the chief business, manufacturing, banking, insurance, railroading, shipping, brokerage and police authorities of the country.

<i>Source of Loss</i>	<i>Probable Annual Total</i>
Financial crimes, such as the operation of bucket shops, land swindles, stock frauds, real estate jobs, confidence games and other fiduciary trickery	\$2,000,000,000 ⁹
Insurance frauds.....	1,000,000,000 ¹⁰
Burglary, holdups, grand and petty larceny..	750,000,000 ¹¹
Forgery and check alteration.....	75,000,000
Embezzlement	125,000,000 ¹²
Fraudulent bankruptcy and other credit frauds	160,000,000 ¹³
Marine theft, harbor and river piracy and miscellaneous	50,000,000
 TOTAL DIRECT LOSS.....	 \$4,160,000,000 ¹⁴

⁹ Computed from estimates of the president of the New York Stock Exchange, the District Attorney of New York County, the Vigilance Committee

In these calculations there has been no attempt to include such items as bootlegging, gambling, losses through dishonesty in the form of bad debts, public and private grafting, bribery, extortion and many other minor headings.

The total of stealing—the direct loss—is, however, only the first item of the general crime bill. There must be added, first of all, the cost of policing the country, of detecting, convicting, maintaining, imprisoning, superintending and forestalling criminals. In other words, the cost of all police forces and systems, the salaries and fees of criminal lawyers, prosecutors, judges, court employees, jurors, examiners, investigators, probation and parole officers, the upkeep of prisons, jails, penitentiaries, juvenile delinquent institutions, reformatories and the like, the pay of their wardens, keepers, medical and clerical staffs, the food, clothing and general supplies of the prisoners and the staffs, the building, rebuilding and repair of penal institutions, the interest on the money invested in these institutions and various other items. Without burdening the reader with another tabulation it may be said that the total annual outlay in this field is about 3 billion dollars.

There must also be counted the very large sums annually contributed by private charity to the relief of convicts and their families, the maintenance of charitable institutions for the delinquent and their dependents, the pay of the officers and

of the United Advertising Clubs of the World, the New York Better Business Bureau, the Investment Bankers' Association and others.

¹⁰ Estimated by the heads of various insurance and indemnity companies and includes losses through arson, insured shipping losses, false claims for life, burglary, fire and other types of insurance.

¹¹ Compiled from various business and official sources.

¹² Estimates of the National Surety Company.

¹³ Compiled by the National Association of Credit Men.

¹⁴ It is probable that conservative practice should dictate a liberal deduction from this total. Inasmuch, however, as many types and classes of crime are not included in the table, no such change is made and 4 billion dollars is likely to prove a fairly accurate estimate of the total annual loss through property crimes in the United States.

attendants of various societies and institutions and much more. What this total may be we do not pretend to know.

Finally, there must be added the indirect economic loss through the idleness of the criminal world. There are usually about 80,000 persons locked up at all times in the major penal institutions of the United States and probably not far short of 200,000 offenders of all kinds held in major and minor prisons, penitentiaries, jails, road gangs, station houses, juvenile institutions and the like. The prison constant of about 200,000 is generally considered to be about 10 per cent of the whole criminal population, so that there are usually nine criminals at large for every one behind bars. This calculation agrees with the usual estimates of criminologists and sociologists with whom the figure of 2 per cent of the population is accepted as the basis for computing the final sum of all constant and intermittent criminals, misdemeanants and the like in the United States. At present there are about one million persons sent to penal institutions every year, New York State alone having committed about 112,000 as a recent annual average.

If we estimate the annual loss of productiveness for each of the 2 million whole-time or part-time criminals at only \$1,000 each, a most conservative figure, we find that another 2 billions of dollars must be added to the crime bill, bringing the final total to somewhere between 9 and 10 billion dollars yearly—two and one-half times the average annual receipts of the government in recent times, three times the average recent national budget, more than three times the customs and internal revenue receipts and twelve times the annual cost of the army and navy in recent years!

Touch the subject of criminality or of penology where you will, the result is the same—more criminals in the United States to-day than ever before, constantly mounting totals of losses through theft, vastly expanded public expenditures for the maintenance of the penal mechanism, the prison system and

the method of capital punishment¹⁵ equally vain and disastrous, criminality among children and adolescents increasing by leaps and bounds, prisons filled with striplings, more and greater prisons building, homicides growing yearly more numerous and the whole population hesitant between horror and admiration of the criminal or itself constantly committing minor infractions of the law.

Evidently, all the methods we now employ, our prisons and punishments, backed by all kinds of social and religious efforts and supported with appalling outlays of treasure, are not able to cope with criminality. It goes on increasing in spite of all we do and all we spend. Even to the dullest must come the suspicion of some great and terrible fundamental mistake. The apparent and appalling bankruptcy of the penal system is no mere expression of inadequacy. It amounts to a collapse, and the conclusion that the whole vast and grotesque structure is founded upon the sands of blundering and ignorance becomes too obvious for further rejection. Nor will all the tinkering now going on in legislatures nor all the earnest recommendations of serious but fuddled crime commissions save it from destruction.

The questions raised at the beginning of this chapter are now only too easy to answer. The penal system, as we have known it and do know it, does not reform its charges. It does not deter from crime. The protection it gives society is of a kind so faulty, so inefficient and so limited as to be both scandalous and ludicrous. Except for the savage satisfaction of vindictiveness, it fails to accomplish any of the ends it has itself projected. The reasons for this tragical debacle will not be hard to find.

¹⁵ See Lewis E. Lawes, "Man's Judgment of Death," a study of the death penalty with recent comparative statistics.

CHAPTER III

BACK TO LOMBROSO

Whatever the people approve must be wrong.

—EPICURUS.

MODERN criminal science dates from 1876, for in that year appeared in Italy the first of that famous succession of studies by Cesare Lombroso and his assistants, disciples and rivals which caused a revolution in social thought and put the term criminology into the languages. Probably there is no figure among the shades of the last generation of scientists at which so much academic mud and popular ridicule have been thrown as that of this Lombroso, and quite possibly no savant has made more incidental mistakes. Indeed, the great professor of criminal anthropology at Turin appears to have been as blundering as Darwin and nearly as ill-informed as Aristotle, yet he managed to make an impression of lasting force and growing significance upon the mind of the world, just as did the noble sons of Shrewsbury and Stagiræ. The moral seems to be that infallibility is not essential to fame and perhaps not to greatness. At any rate, the admitted errors of Lombroso have not prevented his recognition as an epoch maker. They have not even restrained the amateur from attributing to him the rôle of pioneer in the study of crime and its causation.

This last is, to be sure, very wide of the truth, for men were theorizing and researching in this fascinating field some tedious centuries before and at least a pseudo-science had long been outlined. What the Italian school, so-called, did was to attempt an interpretation of the criminal in consonance with the modern positive sciences as they existed in the last generation, thereby lifting the subject out of the mire of metaphysic and the bog

of dubious sociology to a surer and firmer footing. Lombroso himself had been powerfully influenced by Comte and he applied the principles of the great positivist to his chosen field of investigation and theorization. His work turned criminological ideas upside down, but this is far from saying that there were no sober and thoughtful ideas in existence before he came. The point is made because there is a general tendency toward confusion in this matter.

As soon as human thought had emerged from the shadow of superstition, two general sets of ideas began to form themselves about the criminal. Men saw that some offenders were mad or grossly warped in some way. They also noted that thieves were often the sons of thieves and brigands the sons of brigands. It was perhaps an inevitable conclusion in these cases that the criminal must owe his faults to some obscure working of inheritance. But it was also noted that by far the larger number of felons were or seemed no different from the rank and file of human beings and that vast numbers of them came into the world out of respectable parentage. Without in the least questioning the wilfulness or responsibility of such evildoers, early philosophers began to seek for explanations of this phenomenon in the social and other surroundings of the culprits. In such manner were founded what we should to-day call the biological and the environmental theories of criminality.

As a matter of fact our ideas still fall into these two general categories. We can still find no fault with the logic of the conclusion that the criminal, unless he is to be thought of as an unconnected apparition, something that has "just grown," like Topsy, must be considered the result of forces operating on and in his parents or ancestry before his birth or of other forces which have affected him directly. He must either be born or made. The earlier philosophers took the born criminal for granted and devoted their attention chiefly to the process of making. They were environmentalists first and last and

they accumulated a body of facts and hypotheses in line with this position.¹

No doubt the first theory that occurred to criminal students was the moralist or spiritualist notion, which was energetically reaffirmed by a school of criminology in France and Germany in the latter half of the last century and which constantly crops up even to-day in the sonorous pronouncement of many preachers, judges, prosecutors and legislators. The central idea of these antiquated protagonists is that criminality must be due to unwise or insufficient instruction in moral and religious precepts, that the cure for crime is more and sterner religion or morality or both and that modern increases in the number of offenders must be attributed to free thinking and back-sliding and the absence of Biblical instruction in the schools. To minds which look upon the delinquent as no more than a rebellious, ill-willed and froward creature—a sinner against an absolute and immutable law—such tenets remain instinctive and unassailable. Unhappily, they still reign in the psyche of the general, though they have not the slightest standing either in science or in logic, whatever authority they seem to retain through the backwardness of the law.

The veriest amateur at disputation may confute the whole argument with the common observation that religious persons, not excepting priests and teachers of all sects and of the highest position, have in all times and upon innumerable occasions been guilty of the grossest crimes, while moralists of the sternest aspects have all too often been discovered in the most cruel situations, until black hypocrisy has become their most popular ascription.

These statements are naturally not put down as a gratuitous

¹For expositions and reviews of earlier criminological ideas consult G. Aschaffenburg, C. Beccaria, J. Bentham, L. Blanc, J. P. Brissot de Warville, Karl Marx, F. Engels, E. Ferri, Sir F. Galton, R. Garafalo, H. Jolly, L. Manouvrier, H. Pestalozzi, G. Tarde, W. A. Bonger, and various others whose names will be found in the exhaustive bibliography in Vol. 15, Bulletin of the New York Public Library.

reflection upon the religious and moral but as plain facts which all must recognize and explain if they can. For us there is no mystery in the errancies of the holy and the devout, and once more "Tout comprendre, c'est tout pardonner."

If more evidence were needed to invalidate the claims of these old theorists it might readily be found in the tables of two generations of statisticians who have all concluded that the ratio of convicts without religious training and religious adhesions is about one-tenth of 1 per cent.² The percentage of atheism is certainly not lower among the honest and unconfined, so we may dismiss the whole pretension of the spiritualists with a smile of incredulity.

A more valid and important theory of the environmental criminology is held by the Economists and their descendants, the Statisticians. The first master of this school is indubitably that exalted and pitiful practical statesman and political dreamer, Sir Thomas More, who besprinkled his "Utopia" with considerations of the economic and social causes of crimes and inveighed with what prophetic pathos against capital punishment, which he was himself to suffer on Tower Hill for no worse misdeed than a refusal to change his beliefs to please a king.

The chief argument of the economic school is that criminality is the result of poverty or social injustice. It is perhaps taking the mouth rather full to express the divergent, subtly reasoned and widely ramified ideas of the social philosophers of half a dozen centuries thus curtly, in a sentence, but the essence of all is in this distillate. Whether one examines the medieval statesman, ardent Papist and social idealist, More, at the beginning of the sixteenth century, the romantic and democrat, Rousseau, at the end of the eighteenth, or the nineteenth

² W. A. Bongers, in his "Criminality and Economic Conditions," Amsterdam, 1905, New York, 1916, page 209 of the American edition, shows that the proportion of irreligious convicts in 126,000 cases studied in the Netherlands between 1901 and 1909, was 84.2 per 100,000. See also the results in Murchison, "Criminal Intelligence," Worcester, Mass., 1926.

century radicals and socialists, Owen, Marx and Engels, little fundamental divergence from the basic claims will be found and the reader will mark little progress that is of importance except in the remedial recommendations of the successive reformers. D'Holbach sums up the whole plea with his "If wealth is the mother of vices, poverty is the mother of crimes" and William Godwin reduces the economic theory of criminal causation to three clauses: poverty, the ostentation of the rich and the tyrannous and unequal distribution of property or wealth.

In modern times the economist criminologist has been converted into a statistician. The postulate that poverty and want were prolific parents of criminality needed demonstration and various students, mostly in what we have come to term Central Europe, set about gathering the evidence. One of the important claims had been that in times of famine, war and financial depression or panic there was much more property crime than at normal and more happy periods. Dozens of enthusiasts addressed themselves to the gathering and collating of evidential figures and statistics, with the result that a vast body of this kind of data has long been in existence, all of it apparently proving the connection between privation and law-breaking.

There can be no question of the interest and value of these statistical studies, though the conclusions drawn from them are open to criticism from almost every side. For one thing, it was seldom a matter of any uneasiness to the economic theorists that their statistics showed a corresponding increase in the number of non-property crimes when populations were subjected to stresses and disorders. Was one to believe that a rise in the total of such offenses as rape, bigamy, incest and homicides of passion was explicable on the theory of destitution? The economists, when they sought to explain this incongruity at all, contented themselves with the vague statement that extreme poverty tended to make men generally

lawless. We shall be able to interpret these matters much more satisfactorily.

These earlier theories of criminal causation were in full entertainment and of general acceptance when biology came to its first full flower with Darwin. Almost immediately there was a considerable shifting of ground. Old terms began to have new meanings and the old adherents of one school or the other began to divide themselves into fresh camps. It was not long before environment came to mean something fundamentally different from the old interpretation. At the same time the importance of heredity began to be studied and emphasized. Later, Mendelism was applied to all the phenomena of life without much discrimination and we soon had criminal theoreticians divided into two general groups which may as well be referred to as the Hereditarians and the Environmentalists, a biological and a social group, each embracing a number of schools and each inclined to claim for itself a complete explanation or theory of criminality. The Environmentalists, of course, took over the work of their social and economic precursors, with such modifications of interpretation as they now chose to give to the older hypotheses. The Hereditarians stood fast by their newly designed weapons and two decades of polemics ensued, whose details are of no pertinence.

The hereditary theory if extended to its logical extreme, whither none of its adherents has carried it save for a few inconsequential and misguided devotees, predicates that criminal characteristics (and all others) are due to inheritance from ancestors and that criminal conduct is in all cases to be accounted for by such inherited flaws or qualities.

The simon pure environmentalist, in the most emphatic opposition, is likely to maintain that men are made entirely by their surroundings or by what has been called their nurture. Food, poverty, education or the lack thereof, early associations, parental inclinations and mistakes, lack of opportunity, dis-

advantages of social position, indeed all the conditions and incidents of life are the first causes of criminal behavior recognized by the environmental school. These are, to be sure, the environment itself.

The disputations of these adverse enthusiasts were often spiced with irony and mirth. If, contended the Environmentalists, the criminal is to be explained on the theory of inheritance, how does it happen that the worst kinds of offenders often show no hereditary stigmata and are frequently descended from families in which no precedent criminality can be discovered? How does it happen, my friends, that yonder garrotter and assassin is the scion of a long line of respectables, right livers, preachers and moralists? Great confusion and furious searching for excuses and explanations.

The Hereditarians were no less well armed with cynicism. How does it happen, they wanted to know, that many criminals of the deepest dye emerge from the best homes, the finest influences, from an optimum environment? If social conditions make criminals, how explain these fellows who have had every conceivable advantage and have still become the lowest felons? Excluding the factor of occasional insanity, what is the force that makes a crook of the most carefully reared of boys unless it be some fault of inheritance too mysterious to be explained in the present state of our science?

The reader will see that here both sides had made the curious blunder of choosing the same piece of confuting evidence—the son of a good and well-situated family—and using it against each other by a mere reversal of interpretations.

In this impasse, both sides began to retreat and compromise, for nothing could be more ludicrously apparent than that neither inheritance nor environment would cover the whole picture of crime. The safest conclusion to be arrived at was that criminality must be the result of factors both inherited and environmental, and this was the explanation offered in many historic cases and investigations, such as, for instance,

the famous Jukes family inquiry in New York State.³ Here we have the emergence of the so-called Bio-Sociologists, with their facile but unconvincing resourcefulness.

We must not, however, dismiss the hereditarians or their foes with unmixed levity. In the generation now departed the adherents of these schools did a monumental work of investigating and collating. The fact that their deductions from the gathered evidence were generally erroneous and sometimes absurd must be attributed in part to contentious enthusiasm and more largely to the groping that is unavoidable in a science as new and dark as that of criminology.

Much of the evidence gathered by the criminologists of both these schools, and by the older students, is still of pertinence and value. For instance, though it has always been manifest that crime is prevalent among the poor rather than the rich, among the enslaved and disinherited, the lowly and the oppressed, rather than among the high and privileged, it was the function of the Economist school of criminology to formalize the evidence of the influence of poverty and privation upon the conduct of masses of men and to formulate conclusions which are still not without their sober interest to the student of the problem. It is easy enough to say offhand that those who have not and want will naturally commit more crime, especially against property, than those who have and need nothing. But the scientific student requires definite data and specific evidence of the direct influence of hard times, political upheaval, famine and the like. Such facts have been gathered by writers and statisticians already referred to over a very long period.

A comprehensive review of the work of the Economists, together with most complete and interesting statistical tables and modernized conclusions, has been made by Bonger,⁴ to whom the reader is referred for historical data, a summation

³ "The Jukes," R. L. Dugdale, New York, 1877.

⁴ "Criminality and Economic Conditions."

of the older theories and tables showing the relation between economic depression and crime, illiteracy and crime, etc.

The fact remains, however, that poverty and its immediate consequences do have a very considerable influence upon criminality, but their workings are very different from those imagined by these earlier writers. This criticism may be made general. Not one of the criminological teachings is entirely without its point of fact and basis in half truth, but all these older theories suffer from the unhappy burden of error.

One might, for example, ask an economist how it happens, if crimes are due mainly to poverty and if the criminal ratio is supposed to rise in hard times and subside in periods of prosperity—as shown by the statisticians and asserted by the social philosophers—that in the United States to-day, under conditions of almost unexampled prosperity and an almost total absence of unemployment, with a minimum of pauperism and mendicancy,⁵ the proportion of crimes is higher than it has ever been, not only in the matter of offenses against property but in deeds of passion, sexual breaches and all other groupings.

Or one might again confront the hereditarians with the familiar question of the divergence of blood brothers. How does it happen, if criminality is due to inherited faults, that the same father and mother will often bring into the world a brood of excellent, upright, efficient children, with one or two low-grade criminals interspersed? The hereditarian answer is, of course, that there has been a shuffling of the chromosomes in the germ cells and a whole literature has been devoted to the establishment of this theory of variation in offspring. All that needs to be said here is that, while this explanation may account for some of these anomalies and for

⁵ In 1910, with a population of about 92,000,000 there were 84,198 paupers in almshouses in the United States. On January 1, 1924, with a population of about 112,000,000, there were 78,090 persons in these institutions. The disappearance of the bread lines, so common a dozen years ago, and the small number of unemployed in the last few years are matters too familiar to require comment.

some born criminals, the truth, in the majority of cases, will be shown to be otherwise.

In the same strain, we might ask the environmentalists how it chances that two children will be born and reared in the same block at the same time, sent to the same schools, given the same religious and moral instruction, subjected to very similar home environment, their fathers having both been honest, sober and industrious mechanics and their mothers sisters, with the disconcerting result that one became a thug and the other a high official, showing great efficiency in office and distinct idealistic trends. Or we might ask why the same slum so often utters forth gangsters and gentlemen, murderers and merchants, pickpockets and poets, politicians and philosophers.

Everything considered, we must conclude that bad inheritance, a bad milieu and the much belabored bad economic conditions may all be rated as contributory causes of criminality which do not, however, either singly or together offer anything like a complete explanation of the criminal phenomenon or suggest anything beyond highly theoretical remedies. The eugenic method as put forward by hereditarian biologists must be regarded as a little too visionary in character and remote in prospect for serious accounting, and to the radical social program often urged by its proponents as the panacea for all crimes and evils in the world we must plead a deep and unquiet dubiety.

Unquestionably there is room for much improvement in the condition of the poor and surely such melioration of conditions would bring about a lessening of the troubles which spawn criminals into the world, but these remedies can be successfully applied by other means. For ourselves, we can see no virtue in transferring either wealth or power to the so-called proletariat, more especially since it is now clear that the lowly generally occupy their situation because of definite mental inferiority or defectiveness. To the scientific mind the experi-

ment of democracy has already borne sufficient evil fruit to deter any savant person from further illusions as to the possibilities of government by the unfit. Neither do we vision the virtue of any scheme or upheaval which would at best accomplish no more than the shifting of the criminal burden from one group to another.

It was in the muddle of reactionary moralism, radical socialism and cloudy hereditarianism that criminological thought found itself enmeshed when Lombroso appeared in the picture. The reader who is unfamiliar with this subject may need to be reminded that there was no orderly progression from one tenet to another in this field, except in the minds of the few. All the criminal doctrines have been and are still held at the same time by different groups of people. Thus the anthropologists from the South found Europe already deeply engrossed in the environmental-hereditary dispute and came into public attention only to discover that some of their ideas had been anticipated or adumbrated. While Lombroso had been working since 1870 or thereabouts and had issued a first outline of his ideas in 1876, his more important works did not appear until circa 1890⁶ and it was not until that year that Havelock Ellis made the Italian school familiar to English readers with his "The Criminal." Its ideas reached other parts of Europe very little earlier.

Lombroso, to sum up some of his theories briefly, saw what a good many had noted and failed to take into serious account—that the criminal does not necessarily offend against the laws acceptable to his fellows either because he is ignorant, ill-trained, unschooled in moral precepts, irreligious or consciously rebellious and vicious. He noted that many confirmed criminals were men of good education and considerable accomplishment, often of some culture. He saw that other gross criminals were children whom vice had hardly touched, who were filled

⁶ "L'Uomo delinquente," 1889; "La Donna delinquente," 1893; "Le Crime, causes et remèdes," 1899.

with excellent preachments of probity and morality. Accordingly, he concluded that there must be some fundamental fault, probably some inherited defects or evil peculiarities which caused the afflicted to commit crimes whether they wanted to or not.

From this ideal basis Lombroso proceeded to elaborate his explanations. He decided that crime was a biological and anthropological problem. As he himself summed up, he felt that heredity, climate and race were the chief determinants of criminal characteristics. While he did not go so far as some hereditarians have since ventured, he declared that there was a definite criminal type, born and not made. His investigations and accumulations of information, which extended over a long lifetime, resulted in the formulation of the familiar anthropological doctrine which sets forth, in brief, that the typical criminal can be classified apart from other men according to well-marked cranial, cerebral and bodily deformities or peculiarities. The belief that the criminal was probably an atavistic type followed naturally from this premise, though Lombroso was careful to include degeneration in his analysis and to class his anthropological criminals as a special type standing half way between the lunatic and the savage. Another and less judicious reservation which he believed necessary was the distinction between these typical criminals and those who had strayed into crime through the stress of circumstances. Here we have a virtual *volte face*, which undoubtedly grew out of the fact that the anthropologic theory did not cover many observed cases, that it was, in short, inadequate.

A more specific summary of the Lombrosian or Positivist views may be given. Lombroso postulated, first of all, that the criminal is a man of special type, who is born and not made. At first he seems to have believed that all criminals conformed to this type fully, but in later works and editions he modified his ideas and estimated that about 40 per cent of offenders were typical criminals, while the rest were incomplete

or partly stigmatized types. He next asserted that the criminal type may be recognized by means of various physical or anthropological characteristics, such as misshapen or asymmetrical cranium, sparse beard, simiosity, long or prognathous jaw, nervous insensitiveness, especially to pain, animal-like peculiarities in the dentition and the like. Any five of these stigmata indicated a fully developed criminal type. Fewer than three indicated the non-criminal. These characteristics or faults were, of course, inherited and they were explained either as atavism or degeneracy. In the latter field Lombroso laid great emphasis on epilepsy and the epileptoids—an emphasis fully justified by modern psychiatric and endocrinological experience. From all this, the great Italian concluded that the criminal had, because of his inherent defects, no control over his criminality. A typical criminal man was certain to commit crimes unless his social environment was specially good. In the end, because he was unable to explain certain facts beyond the comprehension of physical science in that day, Lombroso admitted that men not of the born criminal type committed crimes under the pressure of most adverse circumstance.

Major Arthur Griffiths and Dr. Charles Goring undertook a detailed rebuttal of Lombroso in a study of English convicts, and exposed all the errors and none of the obvious virtues.

The value of the Lombrosian doctrine is to be found, however, not in its particular claims and explanations but in the general attitude put forward. Crime was no longer to be looked upon as a mere social or moral phenomenon. Its root causes were to be sought through biological, anthropological and medical science. Its typical victims were the fruits of forces entirely beyond the knowledge or control of the individual.

Such ideas, though not unforeshadowed, could not fail to arouse the bitterest hostility and the most determined opposition, for did they not imply a negation of the free will concept

and by that token a direct challenge to the authority of both religion and law? On the one hand the new criminology was looked upon as nothing but a fresh extension of the general attack of evolutionary science upon the churches and the gods, and on the other as a brash attempt to take criminal and penal administration and legislation out of the hands of lawyers and repose it with technicians. The teaching was rebellious, radical and anarchic to the classes which had arrogated to themselves and long controlled the temporal government. To the lords spiritual it was heretical, atheistic and damnable, if not openly blasphemous. How, then, could it prevail?

In spite of such powerful enemies, the new criminology must have made much more rapid popular progress, to match its triumph among scholars and scientists, had it not been for its obvious blunders and shortcomings. These faults or inadequacies the student overlooks or tries to correct, knowing that knowledge, a true daughter of experience, is attained only through repeated trial and error. But the lay mind, which was powerfully attracted to the Lombrosian theory by its inherent commonsense and agreement with ordinary observation, could not help being repelled and finally discouraged by the mistakes and their distortion and magnification at the hands of the hostile.

The matter which has alienated most ill-read opinion from Lombroso is, of course, his overemphasis of physical, particularly cranial and physiognomic, deformities and peculiarities. A great part of his work has to do with the determination and establishment of a criminal type to be recognized universally by certain stigmata and indicia. The professor's enemies naturally seized upon this larger detail of his work and thought, tortured it with ridicule and made the savant look something like a sideshow phrenologist.

Once the public got into its mind that Lombroso had preached that the criminal was invariably a Bill Sikes, a brutal-looking, beetling-browed, prognathous-jawed, squint-eyed sav-

age, it was easy enough to make him out a fool, for the prisons were full of "Angel-faced Kids," "Matinée-Idol Burglars," "Handsome Harrys" and such like gentry, while the daily newspapers, through their half-tone pictures of murderers, bandits, burglars, swindlers and rogues of every stripe, offered abundant and seemingly conclusive evidence of the infinite variety and occasional spiritual quality of the criminal physiognomy.

While, as already noted, Lombroso and his school made their reservations in this matter, still they insisted on it not only with unjustified emphasis but with a mistaken interpretation. As this matter is of the greatest importance to what follows, it may be well to note briefly the facts as they now appear. Many criminals do exhibit marked cranial and facial stigmata, but these are not generally caused by inheritance and they do not necessarily indicate a criminal.⁷ These cranial and cerebral characteristics are, as a matter of fact, nearly always malformities of a kind neither inherited nor, in the old sense of the word, degenerative. In the majority of instances they are the result of a disturbed chemistry in the mother of the victim prevalent at the time of gestation. On the other hand, many criminals show no physical stigmata or indicia whatever, but these offenders are, in spite of this, also the fruits of evil prenatal influences of a different kind or intensity. All this will be elaborated in the proper place. To illustrate the wide divergence of facial characteristics in criminals of the same class, a page of rogues' gallery portraits will be found elsewhere. The authors have purposely taken them from an old work (1886) to avoid the possibility of any purposive distortion or designed arrangement. (Plate I.)

If we have appeared to lay undue stress upon the failure of Lombrosian criminology as a popular theory our actuation has been neither special interest in nor respect for the opinions of the many but, rather, a realization that the acceptances of the

⁷ See Havelock Ellis, "The Criminal."





THE CONSEQUENCE OF THE LOMBROSIAN ERRORS

people and the official program are likely to be in general agreement. One cannot go beyond Epicurus in a contempt for democratic intelligence. On the other hand one must take present conditions into account and consider the forces which bring them about and continue them in existence. Thus, under popular governments, the prejudices of the many are the chief obstacle in the way of progress and it is well to understand how these have been formed.

The complete collapse of the earlier biological or Italian school of criminology in the minds of the rank and file was the signal for the adoption of a public program based exclusively upon the older social or environmental interpretations of felonious conduct, coupled with the spiritual doctrine, more or less disguised. Unless one has studied the subject one is almost certain to accept the penal and institutional arrangements as they exist to-day as having had a long history. As a matter of fact, though the idea of reforming criminals and offenders is old enough, most of the institutions, excepting the prisons themselves, now devoted to this purpose, are of fairly recent creation and the vast extension of the redemptive and preventive social program may almost be said to belong to the last generation.

The fundamental conviction underlying this huge and costly effort whose futility is slowly becoming apparent, is, once more, that delinquency, lawlessness and criminality are the result of evil surroundings and handicaps and that they can be done away with if poverty, slums, brothels, saloons, dives, drink, sweatshops, vice districts, overcrowded homes and the like are abolished. With part of this notion we are in agreement but with the program for handling criminals and young delinquents which has grown out of it we must find the most serious fault. The core of the whole system now employed forms itself about the impression that, since criminality and delinquency are the results of bad environment, they can be corrected by teaching and training and by other related

methods. This is, indeed, one of the great and hungry gods of modernity. How many billions of money are devoted to its glorification annually in Europe and America is a matter not easy to estimate, but every observant person must be aware of the enormous machinery that has been created within the memory of many of the living. Industrial schools, truant classes, children's homes, houses of refuge, reformatories, protectories, juvenile asylums, institutions for the training of the feeble-minded and retarded, settlement houses, manual training classes, neighborhood centers, playgrounds, institutions for social work in the slums, supervision of the children of the poor—all these are parts of this gigantic mechanism whose central purpose is the prevention of criminality and its related evils.

This tremendous edifice, with its colossal strains upon the public purse and upon private charity, stands solely upon the sands of the environmental theory. If they shift, the structure must collapse. If it can be shown that criminality is in fact the result of biological causes or that infants come into the world predestined to anti-social conduct by flaws in their mental and nervous make-up, then the sociological treatment of the trouble is at once rendered absurd and the machinery which has been provided during its regnancy must be discarded or reconstructed to serve entirely different purposes. This is, in fact, the prospect that confronts us, for criminals *are* born into the world with their destiny largely determined and it is now apparent that training and precepts can play only a secondary and completely subordinate part in such redemptive measures as lie within our powers, and the overwhelming evidence of this claim will be adduced.

But we must immediately make clear that this assertion does not conceal any design to return to the doctrines of the hereditarians. The processes by which such abnormalities are produced as commonly result in criminality have, in most cases, nothing to do with inheritance, strictly considered. To

make this clear we must define heredity and limit its meaning.

R. H. Lock, in his "Recent Progress in the Study of Variation, Heredity and Evolution," makes this definition: "Heredity.—The transference of similar characters from one generation of organisms to another, a process effected by means of the germ cells or gametes." The last clause of this definition is to be noted. Lock elucidates the definition, thus: "By inheritance we mean those methods and processes by which the constitution and characteristics of an animal or plant are handed on to its offspring, this transmission of characters being, of course, associated with the fact that the offspring is developed by the processes of growth out of a small fragment detached from the parent organism."

J. Arthur Thomson, in a note in his "Heredity," makes the matter still more clear with ". . . the line of descent is from germ cell to germ cell. The parent is the custodian or trustee of the germ cells rather than their producer. . . . The hereditary relation includes the occurrence of variations as well as the reproduction of likenesses."

The point that heredity proceeds through the germ cells is the matter to be stressed, for it limits and makes precise the meaning of the term. To make the point still more plain, only such characteristics may be regarded as inherited as have shown themselves in the parents or ancestors of the specimen and only such variations may be looked upon as involving the hereditary process as have originated in the reproductive cells of the parents.

It was formerly believed and is still maintained by some that all such variations were ascribable to hereditary causation; in other words, if a child came into the world with certain defects or changes of the characteristics exhibited by its parents and ancestors, it was held that some obscure and untraced hereditary factor had produced them. We now understand that quite other forces may have been at work. Variations may be caused by an involvement of the germ plasm in

the father or mother. These changes are strictly hereditary in nature and likely to be passed on to the offspring. Such damage to the germ plasm may be brought about by certain diseases, by injury to the parent, etc. On the other hand, the far more common flaws, degenerations and changes exhibited by children will now be shown to arise from conditions obtaining in the mother at the time of gestation which do not in any sense involve the germ cells of either parent and are, accordingly, not hereditary. This distinction is of fundamental importance.

The reader will find as he proceeds that the glandular theory of crime accounts for all the discrepancies, errors, oversights and inadequacies of the earlier explanations. By its light we shall be able to see why moral and religious tuition has not succeeded; we shall understand how and why something more than environment is at work upon the character of the delinquent and what that something is, and it will be clear how such stresses as poverty and deprivation bear upon the criminal problem and produce both property and non-property crimes. Such mysteries as the occurrence of criminals in families with no explanatory heredity and the constant apparition of monsters in broods of excellent children of the same parents will be cleared.

Unless our theory went further and broke new ground in the field of positive science, at the same time clearing away some of the old underbrush of error and shortcoming, its claims would be modest indeed. The authors, however, hope to be able to show a lighted way through the difficulties that beset the earlier criminologists and to solve some of the puzzles which have resisted the talents of the hereditarians.

We shall see, as we proceed, that many thousands of children are born malformed both externally and internally through chemical imbalance of their mothers' blood and lymph during pregnancy, which is most often due to disturbances of the ductless glands. Such unhappy individuals as show gross

effects of this trouble are the typical criminals of Lombroso. They exhibit the physical stigmata to which he attached so great an importance. But these outward peculiarities are material to this problem only in the sense that they are indicia of an internal derangement in the brain and other parts of the nervous system. It will be shown that even greater numbers of human beings are born with these internal defects somewhat less marked but none the less present and quite as surely the determinants of behavioristic abnormalities. These individuals are the criminals without the brands of their delinquency burning upon their exteriors. They gave the anthropologists their decisive troubles.

Whatever may be offered here is put forward without vaunting and, we hope, with proper modesty. The theories propounded and claims made are based on twenty years of laboratory and clinical experiment and the observation of more than thirty thousand cases which have been examined and treated in the neuropathological clinic of Post-Graduate Medical School and Hospital, in the New York Children's Court Clinic, and the New York Clearing House for Mental Defectives.⁸ Even upon such evidence it is not well to make sweeping statements, but the fact remains that many hundreds of incipient, active and even confirmed criminals have been successfully treated, normalized and restored to society. To put the matter into popular speech, crime has been cured by applying the knowledge which underlies the theories here presented.

In view of this the authors hope to present what seems to them not only an adequate explanation of criminal conduct and its causes but, perhaps, even a plan by which a vast amount of criminality can be prevented, the number of criminals reduced, the enormous costs lowered and many barbarities and hideous cruelties done away with, to the greater advantage and security of society in general. It is too much to claim a

⁸ By Dr. Schlapp and his assistants.

solution of the criminal problem, but methods will be shown which promise the minimizing of the social burden and the assuaging of one of the deepest of human tragedies.

No one believes that such ideas will be acceptable or understandable to the great and sad procession of mankind, to the very creatures which have in all times suffered most through the penal system, but that is perhaps the best reason for expressing confidence in them.

Book II

MENTAL DEFICIENCY AND CRIMINALITY

CHAPTER I

CELLS, GLANDS AND MEN

Every man is a little world.—*Proverb.*

THE cell is to the human body what the individual man is to human society, the brick to the house, the atom to the chemical. It is not only the material of which the body is constructed but it is an entity in itself, having a distinct life of its own—a birth, a development, a labor or usefulness to perform and a finality. It is the microcosm within our bodily macrocosm. Finally, it is the minute animal out of which the greater is formed.

Such little animals, unicellular creatures, exist and thrive independently of the greater organisms, as in the familiar case of the amœba which makes its home in the water of the nearest ditch or the world encircling sea. In this state they represent the lowest or most primitive form of animal life—the simplest state in which such life can exist on earth. Higher forms of life mark their progression by continually larger or more complicated congregations and groupings of these simple cells. Thus the little jellyfish is no more than a small number of cells grouped together in a spot of protoplasm, a pluricellular creature, which is little developed over the original independent cell. The other extreme of the process of cell congregation is reached in man, whose body contains many billions of these little creatures, of various kinds, shapes, sizes and varieties of usefulness.

General medicine has long understood that any disorder of the human body must be founded upon some disease, injury or other disturbance of the cells. For instance, in pulmonary tuberculosis, there is an inflammation caused by the tubercle

bacillus, which brings about, among other things, a destruction of the lung cells. Or in nephritis we have an inflammation of the kidneys which causes the breaking down of various cells in those organs. Such facts are matters of everyday knowledge. They seem readily apprehensible, though at no great distance of years they were undreamed-of secrets and the first who pronounced them were greeted, as innovators are always hailed, with despite and derision. To-day no pathologist thinks of studying a disease except in its relation to the cells and most informed persons understand this. So much for the human body. When, however, we come to the mind and put forth the statement that disturbances of conduct must also be studied in the cells—those of the brain and other parts of the nervous system—there may be no little incredulity. This statement is, however, the starting point of fact in our consideration of the causes and mechanics of criminality.

The living cell in any cell congregation or body exhibits three forms of activity or power, commonly called the life processes. They are:

The nutritive or feeding process by means of which the cell takes up and stores within itself potential energy.

The formative or growing process, carried on by means of cell division or proliferation.

The functional or working process, *i.e.*, the employment of the stored energy for the tasks appointed to the cells.

These cell processes are so intimately concerned with all that follows, that it is well to note them with care. The cell feeds, not in the familiar way, since it has no alimentary tract, but by the absorption of nutrient chemicals held in solution by the medium in which the cell swims or by which it is surrounded—the water of the pool, stream or sea, in the case of the already mentioned *amœba*; the blood and lymph streams in the case of a bodily cell. It will be noted that the human cells, excepting the corpuscles, have no power of moving about and none of selecting their diet. They must take in what the blood and

CHEMICAL REACTION OF CELLS

lymph bring them, whether boonful or baneful. On this fact a good deal depends.

The formative process of the cell, its growing activity, is, as every high school boy knows, carried on by continual division and redivision of the parent cell and its divided offspring. The cell does not increase its size beyond a mathematically fixed limit, the law of which was explained by Herbert Spencer, thus: Since the surface of a body increases as the square while its volume increases as the cube, a cell which nourishes itself and eliminates only by peripheral absorption and discharge will soon reach the point where the volume will be too great for the surface to accommodate. Hence size is definitely limited. But the cell yet manages growth by increasing in numbers, by making many cells out of the original parent and thus building up the various parts of the body. This activity begins, in the human being, immediately after the ovum is impregnated by the spermatozoon and continues during gestation and throughout youth until the individual reaches the adult stage, when the formative process stops except in certain limited groups of cells such as the blood corpuscles. This process of growth or formation does not, to be sure, cease in all parts of the body at once. There are, in fact, parts or organs of the body which seem to be at their full development at birth and suffer a lessening or regression as the individual matures. Other parts cease their growth at various periods before the attainment of full maturity.

The functional process of cells consists of performing the various simple or complex acts or labors assigned to them by nature. Thus, the amœba functions by performing a simple swimming or crawling locomotive act through the sending out of little arms called pseudopodia, which then draw the main body of the cell after them. It feeds in the same way, by attaching itself to some tiny morsel of food by means of a pseudopod and then encircling the morsel with its little body.

Our human body cells function in many ways. The muscle

cells contract and expand to bring about our various voluntary and involuntary movements. The gland cells secrete their various chemicals used in the interior laboratory. The nerve cells, which will be considered later in detail, take up and store potential energy which they release as kinetic energy when an exploding impulse reaches them. They also pass this impulse along to other cells and into various parts of the nervous system. These are merely samples of the many forms of cell function. This activity of the human cells continues, speaking generally, throughout life and ceases only with death, since there can be no life without it. But there are again the exceptions and gradations. The cells in the sexual mechanism of women abate their functioning at a more or less fixed time in middle life and those of men gradually cease their activity. As senility comes on various cell groups throughout the body show a lessening of power and the senility itself seems to be the result of an exhaustion of the cells in various vital glands, hardening of cells in the blood vessels and the like.

The question as to the nature of cellular activity naturally arises. What is the force that causes the muscle cell to contract, the gland cell to secrete, the nerve cell to discharge its energy or the cells in little marine animalcules to bring about locomotion or feeding? The answer is that in all organisms every activity of a cell is really a chemical reaction or, to state the matter in another way, is the result of an electrical stimulation releasing electro-chemical forces. On this point we shall have to dwell again and yet again with mounting emphasis. For one of the chief contentions here is that the activity of the cells in a man's arms which do his day's deed and that of those other cells in his brain that think his night's thought are alike reactions of chemicals and no more. And just here the greatest abyss widens between one opinion and the other, between the old view and the newer.

In all higher forms of organisms the cells are arranged in groups, each group having its special work to do. The or-

ganism itself is a mechanism or rather, to use the factory term, a line of machinery, which takes in raw material in the form of nourishment and gradually transforms this material, by passing it through a series of connected machines into usable energy by means of which the organism as a whole performs its work. In the case of our own organism, the whole human body, food and drink and air are the raw materials. The stomach, the lungs, the bowels, liver, kidneys, glands, nervous system, brain, heart and so forth are all connected machines which do some part of the work of transforming our raw materials into the ready energy by which we perform all our tasks—hewing wood and drawing water or bridging the seas with steel and the depths of space with speculations.

Our good friends, the defenders of the spiritual interpretation of life, whether they call themselves idealists, metaphysicians, philosophers, theologians or what not, will wish to spring into the breach here with the antique question as to the force that causes this machine to run or, in any event, the spark that starts it. What is the energy, force or intelligence, they will ask, that starts the mechanism or causes the chemical reaction in the cell? They will deal again in such terms as primal impulse, in the *Anstoss* of Fichte or the tenderly conceived *élan vital* of Professor Bergson.

There was, indeed, a time in the history of the mechanistic philosophy or, better, of scientific materialism, when such demands created not a little difficulty and could perhaps be met only by negative means.¹ That day, thanks to the monumental work of biologists, physiologists and neurologists of the last century and especially those of the twentieth century, is now happily past. Indeed, it would be impossible to go on with

¹ Even Cabanis, who was the first to establish the relation between thought and the functions of the brain and nervous system and between psychology and biology, and who may therefore be called the father of physiological psychology if not, as sometimes, the founder of scientific materialism, found it necessary in the end to ascribe to nature both intelligence and will, and to the individual a first impulse which he called the ego.

the present exposition without elucidating this force or impulse and its origination.

Just as the little cell is filled with potential energy, which it has taken from the blood and lymph by its feeding or nutritive activity, so the human being as a whole is a gigantic storage battery in which potential energy is put away that has been derived from the raw materials taken in through the alimentary canal. (The analogy to the storage batteries of automobiles, airplanes and submarines, with their numerous individual cells is perhaps too obvious to be avoidable.) In the case of a man-made battery the starting impulse is furnished by man. In the case of the nature-made human body it is nature which supplies the spark.

Dr. Crile explains the process with singular lucidity:

"The first respiratory movements of the newborn babe are excited by the very delicately adjusted center in the medulla which responds to external stimuli or to slight variations in the alkalinity (hydrogen-ion concentration) of the blood, this variation being produced by the asphyxia resulting from the withdrawal of the maternal circulation when the placental structures are separated. With the pressure of the lips of the newborn child against the nipple, the act of sucking is excited. The presence of milk in the mouth excites swallowing; and the entire digestive mechanism is activated by the swallowed milk. Thus the child becomes a breathing, sucking, digesting *mechanism*.² Light and shadow and sound soon activate the brain. Each activation of the mechanism for the execution of a given action through contact or distance stimuli facilitates the passage of repetitions of these stimuli and thus are the first of the vast numbers of action patterns formed. In the plastic brain of the newborn babe new action patterns are made during each wakeful moment. Contact stimuli become associated with distance stimuli and associative memory is established."

This starting and sparking impulse in the case of man is not

² "Man—An Adaptive Mechanism," page 368.

singular but plural. That is to say, the impulses which cause the human storage battery to release the energy stored in its billions of cells are flowing in from the hand of nature at all times. They originate in the surrounding medium or, as we say in the case of the human mechanism, the natural environment—the air, the sunlight, the earth, in whatever the senses of man perceive, in all that is about him. These impulses flow in, of course, through what is called the sensory gateway, which is in itself a complicated mechanism for the reception of these impressions or impulses from without.

It may be of interest to note that the senses which use this gateway are not five, as formerly considered, but probably nine. Sight, hearing, touch, smell and taste form the old category but a better knowledge of the nervous system has forced us to divide feeling into various branches, thus: the tactile sense, the deep muscular sense and the pain and temperature sense, each one using a separate set of nerves or being otherwise distinguished. Then follows the sense of balance whose impressions are taken up by the nerve ends in the semicircular canal of the ear and pass through the vestibular branch of the acoustic nerve to the brain. Finally, we have the various stimuli of the vegetative nervous system which, broadly speaking, controls our involuntary activities.³

Through these various parts of the general sense mechanism there flows into the human organism an unending stream of stimuli, which transform the potential energy in the nerve cells into kinetic energy. This, in turn, flows along the nerves in the form of impulses. These reach the nerve centers in the brain, which in turn send out other impulses that lead to human actions. Such stimuli from without also pass with great speed into the sympathetic nervous system and cause the cells in the

³ The authors are conscious of the anomaly of using such terms as voluntary and involuntary after having denied the existence of will. They feel, however, that it is better to accept this contradiction and use such terms as are understood than to clutter the text with an involved new terminology, which can only destroy lucidity and add to the confusions of the reader.

glands and other organs to react in such manner as to meet the situation confronting the human being.

How marvelous this sensory mechanism is few of us stop to think, since to feel, to see, to taste, to smell, to hear and the like are automatic and commonplace. We have only to analyze in the most simple way, however, to be impressed with wonder. For instance, light, which is one kind of energy, strikes the retina of the eye and there causes the cells to send out waves of nerve energy, which travel along the optic nerve and tract into the occipital lobe of the brain and there register a picture or image, which immediately passes on to the association centers which are connected with what we call memory. The energy given off by a flower, by the throat of a bird, is likewise transformed by other sensory organs and their cells and impinges on our brains as nerve energy with the result of such sensations and ideas as we all recall.

But, going back to the original thought here, we find ourselves confronted by the idea that our bodies are no more than mechanisms which store energy and use it for their appointed work, which would not and could not react but for these impulses from outside. That is to say, there would be no life without these stimuli from the medium of nature in which we live. And just here we find a great illumination shed upon the dark confusions of the hereditarians and environmentalists. If, as we have seen, there can be no life without these compelling waves of energy from man's environment, there can also be no heredity separated from that environment—not a new conclusion but one most clearly demonstrated by this realization of the great mechanism.

We have already seen that the human being is a series of connected machines and that each is made up of a number of cell groups, which correspond roughly to the parts of a machine. In a factory, where a line of automatic machinery is taking in the raw materials at one end and turning out the finished product at the other, every machine in the line and all parts

A CHAIN OF MACHINES

of every machine must perform their appointed tasks at the correct speed, at the right time, in the expected manner and with a minimum of faults—in harmony with the rest of the general mechanism. Just so in the body, each organ, part or cell group must function rhythmically and harmoniously with the others. If any part gets out of order or breaks down it becomes impossible for the rest of the mechanism to do its work or to give forth its normal product. This is as true of a match factory, a complicated printing press or a textile mill as of the human body.

In the human machine, however, this interdependence goes a step further. Not only must all important parts and appliances be up to the general efficiency but there is at work an inner economy by whose laws each group of cells must return to the general organism its measured share of the particular product it is designed to give forth. Every cell and group of cells in our bodies consumes its share of the general amount of nourishment taken in by eating, drinking and breathing. In other words, it draws materials from the general organism. Accordingly it must also return to that general organism its appointed amount of the kind of energy it was created to produce. One flaw in this chain of interdependence is likely to upset the whole system.

For instance: If the lung cells fail to absorb the proper amounts of oxygen, the whole bodily metabolism is disturbed, proper elimination becomes impossible, the heart action becomes disordered, carbon dioxide accumulates and death may follow. Similarly, if the cells in the pancreas called the Islands of Langerhans fail to do their work, there follows another series of general results which we call the disease diabetes. Just what this malady is and how it comes about may be interesting and will show the interdependence of the various parts of the body.

Eaten starch is converted by the digestive fluids into soluble glucose, which is the form in which the energy derived from

carbohydrate foods is used in the body. But our bodies do not use up the food energies as quickly as they are taken in. There is, accordingly, a storage system by means of which we put away this sugar to be used as reserve energy. In order to accomplish this the soluble glucose must be converted into an insoluble carbohydrate called glycogen, which has a more compact molecule. The Langerhans Islands give off a chemical which converts the glucose into glycogen and makes possible its storage in the cells of the liver and the muscles. If these islands are diseased the soluble glucose is not converted and flows off through the kidneys. This is the beginning of diabetes. As the trouble progresses, the sugar content of the body becomes depleted, since no more is being stored to take the place of whatever may be used. The sufferer soon begins to lose weight, grows constantly weaker because all his organs are starved for sugar, and eventually dies.

Banting's Insulin, of which so much has been written, is nothing but the Langerhans cell substance prepared from the pancreas of young food animals. The diabetes sufferer ingests it and so returns to the body the missing glucose-converting chemical. The body is then once more able to store glycogen and the course of the diabetes is arrested.

This matter of the interdependence of the cells, the cell groups and the organs of the body is a matter to be stressed and remembered, as it has a constant bearing. The fundamental point, once more, is that the minute cells become disturbed or diseased and that from this small focus of trouble the disturbance of the whole body spreads out.

But how does this trouble in the cells originate?

Let us return once more to our friend, the amœba, which is no more than a free swimming or floating cell in bogs, pools, sluggish rivers and estuaries. The amœba, wherever it lives, is, like all other creatures, dependent for health and survival upon its normal environment—upon the food and other conditions of life to which it is accustomed. If that environment

becomes abnormal through too high or too low temperature of the water, too high or low salt content, absence of the usual nutrient matter, presence of deleterious substances in the water, such as impurities from factories or other drainage, suspension of unfamiliar chemicals and the like, the amoeba becomes diseased and dies.

The cells in the human body become disordered in the same ways precisely—if there are extrinsic poisons, such as drugs and alcohol in the system; if there are intrinsic poisons such as result from infectious diseases or from the pus of focal infections, or if the chemical norm of the blood and lymph gets out of balance. The blood and lymph form the media or environment of the human cell, the surroundings in which it lives, the bringers of its nourishment. They are to the tiny cell what food, air and water are to that aggregation of cells called man. Man cannot live without pure air, food and water. His cells sicken and perish if the blood and lymph are long tainted in any way.

Such disturbances of the blood and lymph chemistry or the presence of deleterious substances may affect any one of the three activities or processes of the cell. Naturally, the nutritive activity will be the first to suffer, since disbalance means an unhealthful diet. It follows that a cell so affected, being in the first place unable to nourish itself properly, is likely to become stunted and to divide (or grow) unhealthily or not at all. This is what is called a disturbance of the formative process. In other situations, where the affected cells have already concluded their formative labors, the imbalance of chemicals or the presence of toxins in the blood and lymph produces the kind of cellular disorders which express themselves in faulty function. In such instances the cell does not do its work correctly. It gives unhealthy responses. Sometimes it fails to respond at all. Speaking broadly, if the imbalance of the blood and lymph chemistry manifests itself in early life, the cells are

likely to form badly; if the trouble comes along after maturity, they work badly.

Leaving aside for the present the matter of external and internal poisons and the manner in which they disturb or inhibit the cell activities, we must take the next step toward the inner mystery and inquire into the causes of chemical imbalance in the body and into the nature of the mechanism which controls our chemical destinies. Here we come at once into the presence of those long mysterious but gradually emerging organs, the ductless glands or endocrines. These are the chemical factories of the body. Each one gives off a special chemical product called a hormone or antocoid⁴ which has its allotted work to do. The transforming of glucose into glycogen by the hormone of the Islands of Langerhans, previously cited, is an example.

These endocrine glands form a system throughout the body and are known to be closely linked or interdependent in their activities, so that the disorder of any one of the important glands is almost certain to derange the others. Naturally, then, the glands are not only the chief governors of systemic chemistry, through the discharge of their hormones, but it is their health or unhealth which determines whether the blood and lymph streams, in which the cells live and on which they depend for their sustenance, are properly or improperly adjusted to the needs of our constituent animalcules. These glands must be in a normal state of health if they are to give off neither too much nor too little of their chemicals but exactly the right amounts to maintain what is called the chemical balance; in other words, the correct living conditions for the cells.

Traces of these endocrine glands have been found in various crustaceans and they are prominently developed in the bodies of the amphibians and reptiles. They have, thus, a

⁴ Some authorities use the term hormone to describe only such secretions as excite or increase activity and chalone for those which diminish or inhibit it.

long phylogenetic history and many authorities attribute to special glands, such as the thyroid, a direct influence upon — morphological changes and therefore upon the evolution of species.

The antocoid substances discharged by the glands are physiologically specific among the various species of mammals, it having been shown that the extract from the suprarenals of a whale is chemically the same as that taken from the suprarenals of a sheep. Likewise, the thyroid extract from the sheep or from calves produces, when fed to young tadpoles and salamanders, the same immediate and developmental effects noted in the mammals from which it was derived or in man. That is to say, it increases the metabolism and accelerates growth. The high chemical potency of some of these hormones may be seen from the fact that the suprarenal extract has been known to show a perceptible effect upon smooth muscle tissue when used in a dilution of one to one billion or about one grain to fifty tons of fluid. (Hoskins.)

While the true science of the glands, as it is now understood, is of distinctly recent development—so recent in fact that the word endocrine and many other terms dealing with this branch of medical knowledge do not appear in dictionaries bearing the date of only ten years ago—it is still a curious fact that something about glands was vaguely understood even in antiquity. Juvenal remarks that goiter in the Alps was nothing to excite astonishment, and Pliny showed some understanding of the causes of this trouble when he remarked that only men and swine showed such swellings of the throat, which were due to the water they drank. Toward the end of the twelfth century the surgeon Roger of Palermo used sea weeds and sponges in the treatment of goiter, probably understanding their high iodine content and the effects of that element on the thyroid.

The learned Theophrastus Bombast von Hohenheim, whom modernity knows as Paracelsus, went even further. He studied

the endemic goiter situation in the Salzburg region, attributed the disease to the metallic or mineral content of the water and noted that cretinous children were often born of goitered mothers. On these observations Paracelsus based his theory of the origin of idiocy (*generatio stultorum*). Leaving aside his astrological and other metaphysical reasonings and perambulations, his idea was roughly that idiots were the produce of mothers who suffered from this minerally caused goiter. In what astonishing consonance with modern glandular science this conclusion remains will be noted in a later chapter.

Without going into the history of glandular discoveries or the description of the various diseases and disorders affecting the glands or caused by their disturbances, which material may be found in any standard work on endocrinology, we shall proceed here to outline briefly the main currents of our knowledge of the glands and their probable function. The reader is asked to remember that endocrine science is still in its infancy, that definite knowledge on many points is not yet in hand, that there are endless disputes and uncertainties, that various experimenters have reported diametrically opposite results from similar researches and that positive or dogmatic statements are extremely perilous. In spite of all this, however, enough general and specific knowledge is now at hand, as a result of both laboratory experiment and clinical observation, to indicate very strong probabilities and, in some cases, certainties.

The important endocrine glands are:

The pituitary, consisting of anterior, median and posterior parts or bodies, and a pars tuberalis, which are believed to have separate characters and functions. This gland lies in the bony structure at the base of the forward part of the brain.

The pineal, protruding from the roof of the third ventricle of the brain.

The thyroid, consisting of two lobes and an isthmus, located at the throat below the Adam's apple.

THE ENDOCRINES AND THEIR HORMONES

The parathyroids, usually four small glands situated in pairs behind and at either side of the thyroid lobes.

The thymus, two longish sacks behind the sternum and between the two lobes of the lungs.

The suprarenals, above the kidneys.

The interstitial cells of the sex glands.

The liver (in some of its functions).

The pancreas with its Langerhans cells or islands.

Various cells or groups of cells similar to the chromofin cells of the suprarenals, found along the ganglia of the abdomen.

In addition to the points already referred to, namely, the fact that the glands form a chain and are interdependent, the control of the chemical balance by the glands and their consequent power over the health and unhealth of the cells, there are other generally recognized details of glandular knowledge. It is well understood, for instance, that the activity of the glands is stimulated by impulses from without which pass through the sympathetic nervous system. Emotional shocks are known to cause the glands to react excessively and it is generally accepted that long continued emotional stresses cause more or less permanent disturbances or disorders of various endocrine organs.

One of the most important recognitions is that over- or under-activity of the glands has its direct effect upon the nervous system and that, conversely, irritation or other disturbance of the nerves causes abnormal functioning of the glands.

Another highly important fact, concerning which there can be no doubt, is that the gland hormones, like various extrinsic and intrinsic toxins, act selectively. That is to say, each one of the hormones will affect the growth or function of certain groups of cells and not of others. So it happens that the hormone of one gland will be the chemical substance which controls the formation, activity and general health of one part of the body and particularly of the nervous system, but has no direct connection with other parts. Here, however, there

is a secondary influence, since the disorder of Gland A, which controls Activities A and Regions or Parts A, will shortly involve Gland B and thus indirectly affect Activities B and Parts B. For instance, we know from many observations of cases of pituitary deficiency in early life (Froelich's syndrome) that the gonads, male and female, remain underdeveloped.

Again calling attention to the uncertainty and contradictoriness of our data and the vast labors which have yet to be performed in the field, we will attempt to present, not without reservation, a short outline of the supposed activities of the various glands and their hormones. Because in the period before maturity gland disturbances affect the formative or growth processes,⁵ whereas, later in life their effect is upon the function of the various cell groups, it is perhaps an advantage to divide these activities or effects into the formative and functional categories.

Of all the glands the thyroid has been longest and most successfully studied, with the result that our knowledge of it is most firm and our ability to treat its disorders most advanced. Its hormone was first prepared from the gland by Bauman in 1895 and isolated in a crystalline form by Kendall in 1914.

The formative influence of the thyroid may be described as follows:

The thyroid hormone is essential to the proper oxidation of living tissue called metabolism. For that reason it influences the growth of tissues generally, but it has a particular effect upon the brain or central nervous system, the bones, the teeth, the skin and the sex organs. Absence of the thyroid gland or great deficiency of its hormone, thyroxin, results in cretinism, whether in man or the lower mammals. In cretins and cretinoid types we find idiocy, dwarfism, pallor and a general failure of development. It is a question how long the human being can

⁵ It is to be understood of course that cells already present and functioning in early life may also be affected in their functional processes.

survive in cases of the complete absence of thyroid substance.

The effects of thyroid hormone on function are equally important. First of all it is the great accelerator of the metabolism or tissue change. Hence, the presence of hypernormal quantities of thyroxin causes too rapid metabolism in the body, while deficiency of this hormone leads to a general slowing of internal change. The thyroid not only affects the protein metabolism, but, probably in connection with the medullary substance of the suprarenals and the pituitary, it has an important influence on the consumption of the carbohydrates. Thyroid substance acts upon both the sympathetic and the autonomic nervous systems in a selective manner.

From our point of view, however, the most important work of the thyroid substance is its sensitizing effect upon the tissues of the brain. This phenomenon has not been demonstrated experimentally but clinical observations place it outside the shadow of doubt. We know that persons whose thyroids are overactive are certain to be sensitive, nervous, emotional, high strung and likely to be lean or emaciated. Their mentality is keen, the mind processes being unusually active. Their movements are quick and tense. In cases where the overpresence of thyroxin is great, both nervous and psychic disturbances begin to appear. Where the hypernormal presence of thyroxin has sensitized the tissues of the brain to a point short of definite disease but beyond the normal limits, the individual becomes subject to overpowering emotions, is suggestible and easily led and has generally poor control over his acts, which important facts will be elaborated.

The suprarenals are at least as important as the thyroid, but our knowledge of them and their workings is far less definite. It seems certain that no mammal can live for more than a very short time without these glands. Animals from whom they have been extirpated experimentally have died in a few days from exhaustion and respiratory failure. What knowledge we have of this gland is confined to the medullary

substance or part. Of the cortex which surrounds this medulla we have almost no right to speak with anything but doubt. It may be significant that its cells closely resemble the Leydig cells of the gonads.

Of the formative effects of the suprarenals nothing can be stated with any feeling of confidence. That they exercise marked effects upon the development of the infantile body seems beyond question, but details we have none.

The functional influence of the medullary substance of the suprarenals, a hormone variously referred to as suprarenin, adrenalin, adrenin and epinephrin, has been demonstrated by various experimenters. It was first partly isolated by Fraenkel, more purely prepared by von Fürth and by Abel, and at last, in a crystalline form by Takamini and by Aldrich. It affects the metabolism of sugars, in conjunction with the thyroid and pituitary hormones. It affects the heart, contracts the blood vessels, mobilizes the blood cells in certain tissues, increases the blood pressure in selected areas, hastens the coagulation of blood,⁶ has a direct influence upon the other glands through the sympathetic nerves, affects both the vegetative and central nervous systems. Most important, however, is the fact that this hormone is a motor exciter. It is discharged excessively in situations of peril, fatigue, emotional storms and other stresses. The suprarenals may, therefore, be looked upon as the bodily danger or emergency mechanism.⁷ Psychically regarded, it may be considered the mechanism of combativeness, courage and aggressiveness.)

Concerning the pituitary gland or hypophysis there is again much doubt and difference of opinion. As already noted, this gland, about the size of a small marble, has always been regarded as consisting of three parts. In 1913, however, a fourth division, called the pars tuberalis, was histologically described

⁶ See Walter B. Cannon, "Bodily Changes in Pain, Hunger, Fear and Rage," Chapter IX.

⁷ *Ibid.* Chapters X to XV.

THE PITUITARY AND ITS HORMONE

by Tilney. In 1918, Atwell, as the result of experiments with rabbits, showed it to have a distinct embryological origin. Whether it produces any chemical is not known. The anterior and posterior lobes produce their separate hormones and it is suspected that the median part also gives off its distinct chemical substance. The hormone of the posterior lobe, called pituitrine, has a well-known influence on the metabolism, on the heart action, on the blood pressure and on the contractility of smooth muscles, having been used in recent years to facilitate delivery in parturition.

The pituitary gland's influence on the formative activity of cells is supposed to repose in the hormone of the anterior lobe, isolated in 1916 by Robertson and called tethelin. Presumably, this hormone acts with that of the thyroid in promoting growth, but there is dispute as to the period at which this hormone begins to work and the exact nature of its influence. It is believed by some that if the anterior lobe of the pituitary is active in early life the result is probably no more than a harmonious overgrowth resulting in specially large individuals. But quite inharmonious gigantism is also one of the effects. If, as often happens, the discharge of tethelin becomes abnormally large in later life the result is a selective reawakening of the formative activity, attended by a series of manifestations to which the name of acromegaly has been given. Certain parts of the body become exaggerated through fresh growth. Likewise, there is a functional effect, for these individuals suffer from disturbance of the metabolism, with mental dullness, hebetude and flaccidity.

Underactivity of the anterior lobe of this gland brings about a negative or inhibitory disturbance of growth, while the same fault in the posterior lobe causes, through an upset of the carbohydrate metabolism, accumulation of fat and other more marked bodily phenomena.

It has recently been stated that Drs. Dandy and Reickert of Johns Hopkins have been able to remove the whole gland

without subsequent death, a statement which is to be accepted with the utmost caution.

From the present point of view, however, the chief interest in the pituitary gland confines itself to two headings; first, the interrelation of this organ, the sex glands, the suprarenals and the thyroid; secondly, the distinct morphological changes which come about in the human being through disturbance of the pituitary and their subsequent influence upon behavior.

The pineal gland or epiphysis is considered to exercise an effect upon the development of some of the important organs, including the sex glands. In cases where this gland has been found attacked by tumors or otherwise diseased, premature development of the gonads and early manifestation of the secondary sexual characteristics have been noted and many associate youthful disturbances of the pineal with mental precocity. It has been observed that this gland diminishes in size and even atrophies in later life and it has therefore been deduced that its chief work has to do with developmental processes occurring before puberty. There is again a marked connection between the pineal and other endocrine organs, specifically the sex glands and the suprarenal cortex.

The sex glands are the most primitive of all the endocrine organs and show no nervous connection with the other glands, so that communication must be by chemical means. They contain two kinds of cells, those which produce the spermatozoa or ova and the interstitial cells, which give off the hormone. The chemical of the interstitial cells produces the secondary characteristics of both sexes. It differs, to be sure, according to whether the individual is male or female and produces the distinct physical and mental results contrasting the sexes. It grows the beards of men and the antlers of stags. It marks the physical differences between the stallion and the gelding, the cock and the capon.

Considered from the standpoint of behavioristic determinism, the interstitial hormone is of the very first importance and

interest. The more obvious mental or psychic effects, such as differentiate male from female, are well known—the indirection, exhibitionism and negativism of the female, the contrary aggressiveness, direction and positivism of the male, the combativeness of various herd males at the rutting season, the ferocity of the female in the nursing period and much more. But the interstitial hormone controls or influences individual gradations of conduct very much more elusive and subtle. In the male the insufficiency or overabundance of this hormone is known to inhibit or exaggerate all manner of behavioristic phenomena, especially those connected with the warlike, combative or fighting instincts and therefore with all their sublimations, such as initiative, personal aggressiveness, self-confidence, egocentricity and the like. In the woman, this shortage or surplus of her interstitial chemical likewise abates or increases the manifestations of such conductory phenomena as are peculiar to her sex.

It is the gradual recession in the activity of the interstitial cells and the consequent shortage of their hormone which is attended by what we term advancing age and eventual senility (Steinach), a regressive development which may hence be looked upon as a subsidence of maleness or femaleness.

The other members of the endocrine chain, the parathyroids, thymus, liver and pancreas, are not certainly known to exercise any direct influence upon the mentality or the conduct of man and there is hence no need of expatiating upon their part in the bodily economy or mechanism. There is, however, reason for asserting their interdependence with the others and their consequent secondary influence upon the actions of the individual. For instance, it has been observed in recent cases of diabetes treated with insulin, the hormone from the islands of the pancreas, that a general glandular readjustment followed, accompanied by severe nervous excitation and extreme vagaries of behavior, including loss of discretion and inhibitory powers, depression and even suicide. No doubt there hap-

pened in these cases an upheaval among the glands and a resultant strong chemical imbalance due to the sudden introduction of the long missing substance of the Langerhans cells.

So much space has been devoted first to cells and then to the glands, not out of any passionate concern with cells and glands as such but rather because they are the determinants of humanity. Something has been said in the preceding pages about the special influence of certain specified glands upon the peculiarities of character and conduct. We must look at this a bit more closely.

The clinician recognizes certain types of men and women who come into his ken as typical products of the disturbance of the various glands. Thus we speak of hyperthyroid and hypothyroid types, meaning men, women or children whose thyroids are over or underproductive of their hormone and who exhibit the symptoms of this trouble. We speak also of disipituitary, interstitial, suprarenal types and others. To the endocrinologist they are not hard to recognize, for their peculiarities of behavior are marked and confined to type.

Thus the hyper- or overactive thyroid man or woman is inclined to be lean, tense, nervous, emotionally unsteady, eager, alert, sensitive, quick in bodily movements and they are usually shrinking, self-effacing, timid and lacking in courage. They are worriers, trouble borrowers and frequently despondents. There are, of course, all grades. Where the excess of the hormone is slight it may even be of advantage to the individual, merely keying him up to special activity and efficiency. But where the exuberance is great or complicated with other disturbances these unfortunates fall prey to all manner of fears, terrors and phobias.

The hypothyroid individual, conversely, exhibits hebetude, lethargy, lack of spirit or ambition, pallor and weakness. If the thyroid lack or shortage happens at birth or in childhood, the result is, of course, cretinism. In adults a great and continued deficiency eventuates in dementia.

TYPES OF GLANDULAR SUFFERERS

The interstitial type offers the sharpest contrasts. Women of this kind are certain to be extremely possessive, exigent, contemptuous of restraints, ready to take the initiative in sex matters, egotistical, cunning, acquisitive, selfish, immodest and ferociously jealous. The interstitial type of man is over-aggressive, foolhardy, ruthless, violent, combative and marred by the same selfishness and egocentricity which distinguish the woman of this category.

All this may fall with no pleasant ring upon the ears of those who think in terms of morality and illusion. That the diffident, the gentle, the unselfish, the refined and the sensitive are creatures not of the will but the helpless mechanical products of inner secretion; that the insatiable and irrepressible adventurers and conquerors of the earth are nothing more; that cowardice and courage, dullness and genius, sloth and aspiration are alike only chemical sublimates—these are not conceptions flattering to the racial ego. Perhaps the teaching is subversive. Yet epiphenomenalism, in the minds of the mass of men, will probably cause no greater upheaval than did the once blinding realization that man and his earth were not the centers of a divinely ordered universe.

In describing such disparate creatures as the hyperthyroid and the interstitial man, one is guilty in some sense of idealization, since in nature such a thing as the disorder of only a single important gland probably does not exist. If the thyroid is overactive to the point of producing marked effects on the nerve centers and through them on the behavior of the sufferer, corresponding disorders of other glands will invariably be noted. This is even more strikingly true of disorders of the interstitials. What might be termed a pure interstitial type has probably never been observed. Either the suprarenal, the pituitary or the thyroid will invariably be found more or less involved if the interstitials are over or underactive. In other words, these disorders are always polyglandular, though in

many cases the trouble, as revealed by the symptoms, may be predominantly thyroid or suprarenal or interstitial or pituitary, as the case may be. As a result of this the clinician gets not a simple image to deal with but usually a highly complex picture in which the coloration from the various affected glands may be most confusingly mixed and elusively blended.

Just as the painter, with a few primary colors in his tubes, may achieve on the palette, by graduated mixture, admixture and combination, an almost endless range of secondary colors, shades, tones, tints and nuances, so with half a dozen hormones in the internal laboratory the human mechanism manages to achieve that infinite variety of form, character and behavior somewhat vaguely described as human nature. This is true as much of abnormality as of normality. The slight variations in the chemical balance which produce differentiation or individuality and the gross imbalances which result in neurotics, maniacs and criminals, are of the same fundamental character and causation.

A good many attempts have been made, since the effects of gland disturbance upon human behavior were first surmised, to classify the gland derangements and particularly to gather the various sufferers into a few large and simple groupings. Eppinger and Hess, for instance, suggested that they could be divided into two great groups called sympatricotonic and vagotonic, according to whether the neurons of the sympathetic or the parasympathetic systems were found to be overactive. While this classification is still in fairly common use, there are various objections to it, not the least of which is that it can be regarded as little more than an arbitrary piece of term making, a practice to which science should resort less and less as its knowledge becomes greater and its conceptions clearer. After all, the abnormal activity of the two branches of the vegetative nervous system is no more than a symptom whose causes, except where they can be traced to drugs or toxins, must be sought among the glands.

Wilhelm Falta ⁸ divides humanity according to the conditions of the glands and vegetative nervous system into three groups, which he calls *stabile*, *debile* and *labile*, using as a basis the earlier statement of Wunderlich that men possess either strong, lax or irritable constitutions. The *stabile* types, according to Falta, are those fortunate ones whose systems show normal reactions, who go through the world calmly and have power to meet life and its emergencies. The *debile* are the weak or flaccid, with subnormal reactions, predisposition to infectious diseases and a generally negative mental or psychic makeup. The *labile*, finally, are the irritable, excitable, emotional, badly controlled human beings, with glands and nervous systems which show these peculiarities.

According to this classification the hypothyroid and hypoadrenal types of men would have to be placed with the *debile*, since they are weak, drained, exhausted, easy prey to infectious diseases, timid and lacking in initiative. Realizing this fact, one is constrained to question at once the value of such terminology and to urge the greater accuracy of the direct etiological descriptives. The fact that a man is debilitated may be interesting, but scientifically it is only the fact that this debility is due to the upheaval of certain known organs that is either accurate or useful.

It is perhaps not necessary to mark the connection between this body of knowledge and speculation and the problem of criminality. If it is true that human actions depend for their quality upon the healthy or unhealthy reactions of certain groups of cells in the body, particularly in the brain and nervous systems; if it is a fact that the condition of these cells is determined mainly by the chemicals produced in and given off by the glands, and if, as has been indicated, it is possible to categorize the race and place men into their proper pigeonholes, which may be labeled according to the various

⁸ "Die Erkrankungen der Blutdrüsen," translated by M. K. Meyers as "The Ductless Glandular Diseases."

glands and their effects on conduct and even upon physical makeup, it follows that a key to the mystery of such extraordinary behavior as that exhibited by the criminal is at hand.

We have now to proceed with an investigation of the precise manner in which the glands act to produce the several abnormal or potentially criminal kinds of beings.

CHAPTER II

THE FAULTS OF THE MOTHERS

"It is not enough to deal with the actual living generation as we find it; if our social growth is to be real we must learn to control future generations."—HAVELOCK ELLIS.

AT Cairo, in a corner of the Bulak Museum, the traveler will find the *ka* statue of Khnoumhotpou, a great noble of the Sixth Dynasty with a magnificent tomb at Sakkara.¹ It may seem at first blush that this long defunct lordling and his surviving image must be matters quite irrelevant to a discussion of this kind, but it happens that Khnoumhotpou was a dwarf and thus a symbol of that strange and enduring fascination which the physically and mentally deformed have in all times exercised upon the imagination.

This squabby Memphian gentleman was not even the first of his kind to figure in the history and the psyche of Egypt, where a preoccupation with the puzzle and the putative powers of the dwarf and pigmy seems to have begun with the dawn. King Khasekehm, Third Dynasty at Hieraconpolis, left a detailed account of his dwarf,² while King Isesi of the Fifth Dynasty exulted in the possession of a pigmy from Punt and King Pepi II has transmitted to modernity a full account of all the precautions and anxieties he imposed on one of his generals, who brought him a dwarf from the land of Ghosts or inner Africa,³ an acquisition which stirred the monarch to greater exuberance than did all the victories beyond the cataract.

These malformed savages, ravished from the villages of dis-

¹ Maspero, "Egyptian Art," 85-89.

² Breasted, "History of Egypt," 41.

³ *Ibid.* 140; also Pepi's letter to Herkhuf.

tant and fabulous tribes, were not only the pets and toys of the Pharaohs but they were regarded with a curious veneration and mystification, which is only partly explained by the fact that they came from beclouded and inscrutable places and jabbered in some unfathomable speech. In some sense, they filled the place of those later hunched fools who were the favorites, counselors and cup companions of medieval and modern European kings, commixing their inhibitions, laughter, sighs, tears and curses through the turbulent chronicles of Shakespeare and Hugo and their thousand inferiors. Again, these Egyptian dwarfs were the ancestors of the deformed mimes of the Greeks, from whom our poor Punchinello and his mad crew are in turn descended.⁴ But our immediate interest in them rests upon their thaumaturgic and prognostic attributions rather than upon any comedic talents they may have possessed. Such misshapen and obscure individuals were considered somehow closer to the gods than ordinary men. Supernatural powers of divination and performance were believed to be theirs and good fortune was supposed to attend any king who possessed such a creature and all who were close to him.

The superstitious interest in deformity and exiguity has been so deep, so ancient and so widespread that their physical peculiarities have affixed themselves even to the gods and anti-gods—Bisa, the Egyptian deity presiding over arms and the toilet, the embryonic form of Ptah, the crippled Hephæstus and Loki, the various enormous or deformed personages of the oriental and savage theogonies and the endless monsters, anthropomorphic beasts, demons, gnomes, devils, fiends and satyrs which populate the realm of man's speculative imagination.

Nor must we lay wholly upon the past the burden of this strange preoccupation with those poor creatures who chance into the world afflicted with bodily or mental grotesqueness.

⁴ Maurice Sand, "History of the Harlequinade."

We have but to think of the modern opera singer who willingly pays a price to rub the twisted spine of some miserable hunch-back, of the Rigolettos who act as mascots to our baseball teams, of the high opinion in which the maunderings of simpletons and lackwits are held by the contemporary Irish and many others. Or we need only consider the widespread belief in some contact between these unfortunates and the fairies and sprites of vulgar acceptance, and the gaping credulity with which the automatic writings, crystal gazing idiocies and alleged clairvoyant utterances of hysterical, neurotic and epileptic women are received by whole multitudes of gullible gudgeons, to realize the vitality of this ancient faith in the divine affiliations of those malformed of body and brain.

To the present consideration all this means simply that mankind has always been puzzled and mystified by deformities and that, being unable to understand these abnormalities and particularly their causation, it has taken refuge in the ready shelter of supernaturalism and superstition. Man has always had to find palliatives for his bewilderment and satisfactions for his curiosity. Two courses were ever open, one of them simple and easy, the other difficult and beset with troubles—to invent a belief or to investigate and discover. One is the antique method, one the modern. Accordingly the malformations of body and mind were once treated by imaginatives and fabulists; more recently by scientific explorers.

We have already noted that the Romans surmised the connection between the mineral content of the Alpine waters and goiter, and that the learned doctor, Paracelsus, observed the relation between goitered mothers and cretinous children. Here reposes the cornerstone of the scientific structure in which is housed our knowledge of mental deformities. The causes of purely physical malformations are pretty generally understood to-day. Prenatal accidents and mishaps in parturition explain a great number of them. Again there are the numerous cases of direct inheritance from deformed ancestors. Finally,

there is the factor of damage to the germ plasm, which may be brought about in a variety of ways but most commonly through the action of the toxins of various diseases or through the action of drugs and other extrinsic poisons. The hereditarians have, to be sure, attributed to this causation many effects which cannot, it seems in the light of other investigations, be admitted. Indeed, they have in various ways and at short intervals set up the most sweeping claims for the injury of the germ plasm as the etiological factor in variations, mutations and deformities of all kinds. These extreme pretensions need not be considered with more than tolerant skepticism, as will be shown. However, there is no doubt now of the deleterious influence of some toxins and toxic situations on the spermatozoön and ovum, as may be readily ascertained from the experiments of Stockerd of Cornell with the germ plasm and embryos of fishes and with the offspring of lower mammals exposed to alcohol and other poisons.

Our concern is, however, not so much with the physical as the mental blunders of nature, with malformity of the brain rather than of the body. In this field, excepting the case of cretins, there has been, until the most recent decades, almost as much darkness, doubt and ambiguity as existed in the minds of those who elevated dwarfs and halfwits to their place of superstitious veneration. In some cases it was observed that the mentally deformed were the children or descendants of parents or ancestors suffering from the same or similar defects, but in many others, in the great majority of instances, to be specific, the clinician and biological observer was forced to note that neither the parentage nor the ancestry of mentally deficient children exhibited any of the expected faults or gave any key to the causative factors. Accordingly, it was necessary to conclude that these mentally deformed individuals, who play a most important part in the history and the problem of criminality, were not the inheritors of parental faults and we shall

see in a moment the sure evidence that most of them were not the result of damage to the germ plasm.

What then is the explanation of these numberless mentally deficient human beings who have been observed in all times and are now crowding their way into the world in ever increasing and truly menacing numbers, filling the jails, the institutions, the prisons and the uncounted early graves? The question still baffles many medical and other scientific investigators yet the facts are, we believe, well in hand.

In speaking of the mentally deficient here, the authors ask the indulgence of the reader for the space in which to define and give precision to two terms which have been used vaguely and interchangeably by biologists, psychiatrists, psychologists and neurologists. In the past the terms "deficient" and "defective" have generally been employed without discrimination and this was perhaps excusable so long as the differences and distinctions, both of causation and character, were not clear. At this writing, however, it is apparent that one kind of mental sufferer owes his troubles to a disturbance of the formative process in the cells at an early stage in the life of the foetus, with the result that certain parts of the central nervous system or brain are either totally absent or only partly formed. The other type has suffered a formative upset either later in foetal life or of a less severe character, with the result that the brain is completely formed, whereas the glands and certain neuron groups have been malformed or underdeveloped.

In the first instance there is an absence or lack in the brain mechanism—in other words, a deficiency. This classification includes idiots, imbeciles, halfwits, low and high grade morons and their related types—the whole feeble-minded family. When subjected to the common psychological tests, all the members of this group show low mental ages or low Intelligence Quotients. They will, accordingly, be referred to as deficiencies or formative types and their trouble will be termed deficiency.

Mental sufferers belonging to the second classification, on the other hand, are not deficient. Their brains are fully or normally developed. They show high Intelligence Quotients, are often intellectually sound and nimble witted, sometimes display talent and occasionally marked ability or even genius. Instead of deficiency, these types display either subtle or gross faults in the mental and nervous mechanism, which vary in intensity according to their surroundings and situation. As has already been suggested and will be further elucidated, these faults or misfunctions are generally due to disturbances of the glands. Persons belonging in this category uniformly display a marked lack of inhibition, which is to say an inability to control their actions. They are accordingly called emotionally unstable, since it is the emotional mechanism in the brain which is most affected. The fundamental difference between these people and the feeble-minded is that here there is no absence of the parts in the mechanism but merely a failure of some of the parts to do their work—a defect of function, in other words. Consequently, this class of mental sufferer will be referred to as the functional type or the defectives. The narrower sense of this application should be marked and remembered.

It is necessary to remark that there are numerous cases in which the sufferers are both deficient and defective, both formatively and functionally involved, a situation whose causes and possibilities will be gradually developed.

It is probably also well to make note of the epileptics and the insane. Both these types of sufferers often owe their condition to functional disorders of the brain cells which may be induced by a great variety of causes, but this problem does not directly concern us and we may leave it aside.

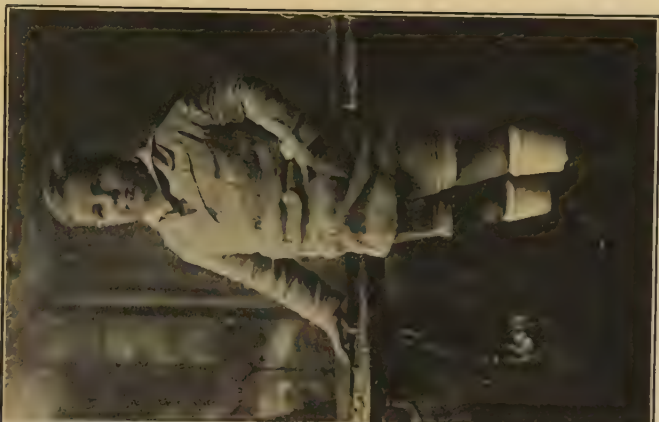
Having cleared the terms, we may return to the deficient and take up immediately a thoroughly representative group, the cretins. These unhappy creatures suffer from both mental and physical deformities of the most obvious character and



A

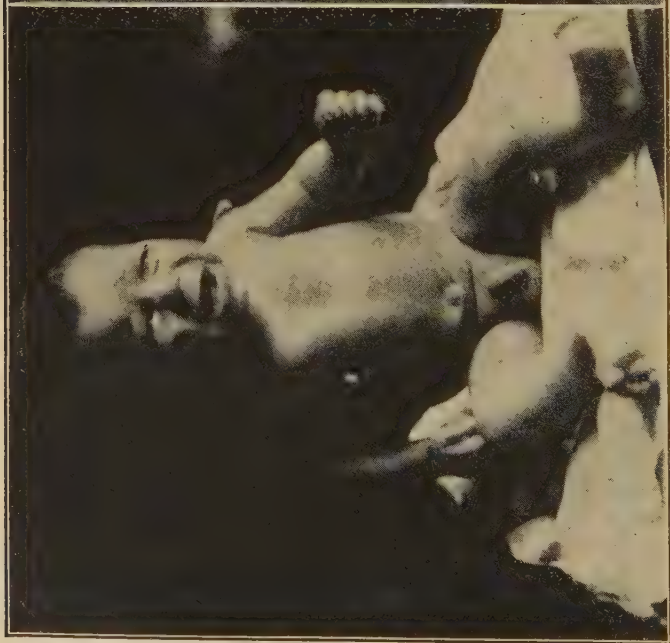


B



C

PLATE 2



A



B

PLATE 3

their treatment has reached the point of great efficiency. Through the successful treatment of cretinism we come upon the surest evidence that the common deformities are not due, as hereditarians have claimed, to injuries of the germ plasm, to chromosome shuffling or to atavism but to endocrine gland situations.

The attention of the reader is directed to Plates 2, 3, 4 and 5. These show four cretinous children treated at the clinic of the Post-Graduate Medical School and Hospital. Plate 2 shows a child suffering from a dangerous hypothyroidism. It was brought to the clinic at the age of 2 years, (A) unable to stand on its legs, gravely retarded and feeble-minded. After fifteen months of treatment (B) the child showed marked progress and at 11 years (C) we see the same child thoroughly normalized, healthy, attractive, bright, ahead of its proper grade in school and ready for a life of usefulness. This boy was born with a very much underdeveloped thyroid gland but there was part of the organ present and, consequently, some of the hormone in the system. For this reason the body and brain did develop partly and it was thus possible to begin the treatment when the subject was actually two years old with excellent results. Had the boy been a more complete cretin, the thyroid gland being vestigial, there would have been a much more severe disturbance of growth and a worse inhibition of the formative process in the cells. In this case the treatment must have been begun in earliest infancy to have succeeded. Treatment consists simply of supplying the deficient thyroid hormone by feeding to the child the extract of the thyroid glands of food animals, as now extensively prepared in the great packing houses. This boy must continue all his life thus to supply his system with the lacking amounts of thyroid substance.

In Plate 3 we have (A) a cretinous child of six months, at which time the administration of thyroid was begun. At the

age of 2 years, (B) we observe the same child, fully up to the standard.

In Plate 4, on the other hand, we have (A) a child at the age of 4 years which had been mistakenly treated for obesity, with the result of harm instead of help. This child suffers from a most serious involvement of the thyroid gland and the effects of proper treatment may be visualized from photograph B, which was taken only six weeks after the patient was examined and supplied with the missing gland chemical. In this child normality can never be achieved because in the four years of its earliest life the great shortage of thyroid hormone caused a practical suspension of the formative activity in the all-important cell groups of the brain and other parts. Not only the brain but the bones and the hair failed to develop properly. This loss of precious ground can never be recaptured from the past and herein lies an important lesson for parents and for physicians. The child will improve gradually under constant administrations of thyroid. It may be saved from imbecility but it will never be an efficient human being.

Plate 5 shows an even more striking case. This patient was brought to the clinic at the age of about 18 months, showing (A) all the evidence of grave hypothyroidism. Photograph B shows the little sufferer after only three weeks of thyroid feeding, beginning to develop physically, showing in its face the sure evidence of great mental progress, and definitely on its way to normal mental and physical health. Just after this photograph had been taken at the clinic, the child's parents decided that a cure had been effected and withdrew it from medical care. At the end of six months, however, their disillusion overcame them and they were forced to return with the child, which had relapsed to a condition practically as grave as in the beginning. It had again grown stupid, torpid, fleshy and imbecilic. Photograph C. Treatment was immediately resumed with the usual striking effects.

This case makes clear the fact that cretinism involves not



PLATE 4



A



B



C

only the formative but the functional processes. Otherwise no such marked improvement as is shown by comparing photographs A and B could have been effected in three weeks. This point is, however, not germane to the immediate topic.

These four cases are no more than random selections from many hundreds treated at the clinic in the course of the last sixteen years. It becomes apparent, when it is understood that the mere provision of the lacking gland hormone accomplished such remarkable changes, that the cause of this type of deformity is purely endocrine and that there has been no involvement of the germ plasm. Otherwise no amount of thyroid substance could have availed.

Having observed that such deformities are due to thyroid deficiency caused by a malformation of the gland, we must proceed at once to an exploration of the factors which bring about such malformities—to the cause beyond the cause, so to speak. Here we step into the presence of facts of the utmost significance to society, to the race of men.

If, as we have seen, such deformities of the body and mind as cretinism manifest themselves in the very first weeks and months of life and must be treated as shortly after birth as possible in order to forestall the failure of growth in the cells, it follows that the origin of the trouble must be looked for in the parentage of the child and traced back through its foetal life.

Here we must at once take note of two controlling facts. First, these cretinous children are not descended from either parents or ancestors showing cretinous tendencies or symptoms. The fathers and mothers were all fully grown, intelligent, normal people, as was carefully ascertained in many hundreds of cases. Again, part of the procedure at the Post-Graduate clinic consists of social and genealogical investigation. Thus the ancestry of each patient has been gone into in the most thorough manner practicable. The multiplicity of instances does away with any possibility of doubt. There can be no

question of inherited characteristics. Second, as already noted, there was no involvement of the germ plasm, so that a theory of hereditary causation can only be maintained on the notion of chromosome shuffling. That this was not the case will be further demonstrated.

Accordingly, we may dismiss the idea of inheritance without further ado and take up some other form of prenatal influence for our explanation. The reader already knows that glandular trouble, causing a disbalance of the blood and lymph chemistry of the mother at the time of gestation, in turn producing an inhibition of the formative cell process in the fœtus, is the theory to be demonstrated.

Paracelsus is thus to an extent vindicated. He noted the connection between diseased mothers and deformed children and he confined the matter to the female parent. Here lies one of his chief glories. His mistaken notion that cretins were the children of women with goiter was not more glaringly inaccurate than the modern ascription of all sorts of variations to hereditary causes.

The facts that have been set down in connection with the cretins and their shortage of the thyroid hormone unquestionably demonstrate that this type of deformity and imbecility is of wholly endocrine character. But that does not of itself prove that endocrine faults of the mother were the determinants of this condition in the child. If, however, we consider in this connection the story of the cells, as set forth in the preceding chapter, the indications become too clear to permit of much doubt.

We have seen that cretinous imbeciles are individuals in whom the formative process has been arrested because of the absence of the necessary chemicals which stimulate the cells to growth. We have also seen that when this chemical is supplied artificially growth is resumed and such cretinous children develop normally. It is, therefore, only a short and direct step of logic, since such children are born with their

defect, to postulate a chemical absence or disbalance in the mother, which caused the selective inhibition of the formative process in the cells of the foetus. In other words, the brain and other essential parts of the nervous system in such children were already retarded prenatally because the mother's system was out of chemical balance and the cells improperly nourished.

It has been shown repeatedly by laboratory experimenters on lower animals that such results can be brought about by subjecting the mothers to the effects of poisons, such as alcohol, drugs and the like. It is also well known that mothers suffering from certain infectious diseases likewise bear deformed children and Dr. Henry Cotton has demonstrated the influence of focal infections, in the teeth, tonsils, sinuses, the colon and the uterus, on the offspring.

One of the most common forms of mental deformity is Mongolian idiocy or imbecility, so named by the late Dr. Langdon-Don for the reason that deficient of this type without exception display the physiognomic peculiarities of the Mongols or Kalmucks. Some even assert that the affinity to the Mongolian racial characteristics goes deeper and is in no sense a mere superficial resemblance but a kind of degenerative atavism to remote Mongoloid or Orangoid ancestors.⁵ Whatever the truth in this controversy, it is established beyond doubt that Mongolism is, like cretinism, an endocrine malady. The only essential difference between the two is found in the identity and number of the glands involved. Cretinism is due mainly to a deficiency of the thyroid gland, whereas Mongolism is a pluri-glandular affliction which must be treated by the administration of the substances of the thyroid, pituitary, pineal and suprarenals. While this treatment does not attain such signal success as that used against cretinism, experience shows that the feeding of gland substances greatly benefits even the lowest Mongolian idiots and helps to improve Mon-

⁵ F. G. Crookshank, J. Langdon-Don, E. Apert, H. Klaatch, *et al.*

goloids suffering from less marked disturbances. There can, accordingly, be no question of the nature of the involvement.

Plate 6 shows a most interesting family group of a mother and four children, all by the same father. The third child, strapped into the perambulator basket, is a typical Mongolian idiot. The two other children and the younger one, seated in the mother's lap, are normal and well developed, having been repeatedly tested and examined. This group and the history of the deficient child shed a light upon the causes of this dread and hitherto mysterious deformity.

In the first month of her pregnancy with her third child, this previously strong and healthy native-born mother was taken ill with Spanish Influenza and remained in bed for about four weeks, part of the time in a dangerous condition. After the influenza had passed she was unable to regain her strength and remained in a depleted state for the balance of the child-forming period. At the end of the full nine months this deficient child was born. The mother was so weak that she could not undertake the nursing. In a few months, however, she quite recovered her strength and only fifteen months later she bore the fourth child, which gives all the normal responses and is apparently healthy in all respects.

There seems to be no question that the idiocy of the child is to be ascribed to the mother's condition during gestation, but there may be some doubt as to whether the damage was brought about by the toxins of the disease or by the parental depletion. Both these causes have been recognized as productive of Mongolism by various observers and it is certainly within the range of probability that both played their part in this case. But here the most interesting question intrudes. By what precise process did either the toxins in the mother or her depletion bring about these deformities of the foetus, these misgrowths both internal and external, cerebral and bodily? The obvious logical induction is that the depletion and toxins caused a disturbance of the endocrines, that this unbalanced



PLATE 6



PLATE 7

the chemistry of the mother's blood and that the formative process in the foetal cells was thereby retarded.

It is a well-known and generally recognized fact that Mongolian children are most commonly born to women approaching the menopause, at which stage of female life the endocrine system is profoundly upheaved. Plate 7 shows a mother with a Mongolian child born when she was forty-five years old. She had previously given birth to three other children, all normal, but had also had two miscarriages. The same father was responsible throughout and no hereditary taint could be traced. There had been considerable financial trouble during the last pregnancy and she had frequent arguments with her husband on this account. There had also been a death in the family. But the mother was not ill in the ordinary sense. She was, however, in a state of great emotional tension and nervous excitement such as commonly occurs at the life change. This matter is of a significance that will appear. Plate 8, again, represents a mother with one normal daughter of eighteen and a Mongolian daughter of eleven, her last child, born when she was about forty-four. There are two other normal offspring, aged twenty and sixteen. It is significant that all the elder children are not only free from mental deficiency but are more physically advanced than their mother. In this case, again, there was no discoverable trace of hereditary faults and no ill-health in the common father of the four. Accordingly, premenopause disturbance of the glands is the only tenable theory and, as already stated, the one generally accepted.

Since all Mongolian idiots and imbeciles display mental and physical abnormalities that vary in degree only, it is reasonable to induce that a uniform process of causation must be at work. And, as it is apparent that Mongolism occurs most commonly at a time when the glands of the mother are known to be perturbed, we must conclude that Mongols born to younger mothers are probably the direct result of comparable gland upheavals and only the indirect fruit of depletion, infectious

disease or other toxins. This is, of course, another way of saying that drains, toxications and the like affect the maternal glands, which in turn cause Mongolism.

Some physicians and anthropologists consider that these Mongoloid deficientes are incomplete or unfinished children and believe that they result when the reproductive powers of the parents (not necessarily the mother) are either exhausted or not fully developed. This idea is based, of course, on the fact that Mongolians are born both to old mothers and to very young and immature mothers. But here again there is evidence that the whole trouble is endocrine and that the glands offer a satisfactory explanation, for just as the premenopause Mongols are due to the disruption of gland balance which attends the change of life, so those who come into the world from the loins of very young mothers may be the result of that glandular furor which attends adolescence and continues in some young women for a number of years aggravated by some extraneous factor. The fact that precisely the same kind of morbid child is born to women at the two opposite poles of their fecund life, when endocrine turmoil is inevitable and pronounced, is suggestive evidence of glandular causation.

By way of connecting the Mongols and the cretins, it is interesting to note that Mongolism is also attended by a marked thyroid deficiency, that Mongol children frequently display myxædæma in later years and that they are, according to some observers at least, frequently born to sub-thyroid or myxædæmatous mothers.

The selectivity of the action of the various gland hormones has already been pointed out. In this peculiarity will be found the explanation of the variety in both deficientes and defectives. In the case of the cretin there is a sub-thyroid condition which by reason of the selective action of the hormones, causes the growth inhibition of only certain cerebral and bodily parts. This produces, if unremedied, an idiot of one recognized type. On the other hand, Mongolism is attended by the under-



PLATE 8

activity of several glands, which causes a different selective action, producing an idiot of another type. This selectivity is, of course, almost unlimited, as has previously been shown.

Speaking generally, the evidence in support of the assertion that such mental deformities and deficiencies are usually caused by gland derangements in mothers at the time of gestation may be summed up under four headings.

1. Such deficient children have malformed, undersized, sub-active or missing glands from birth, as revealed by post-mortem examinations and by tests on the living.

2. Artificial provision of the lacking gland substances either corrects or modifies the symptoms, as demonstrated in the cases of the above cited cretins.

3. Mothers of such children commonly exhibit gland disturbance, as shown by laboratory tests and clinical studies.

4. Mothers with disturbed glands who have given birth to monstrous offspring, commonly bear sound children later, when their gland maladies have been treated and their endocrine balance has been restored.

Further cases and evidence on these points will follow.

It must now be sufficiently clear that the great mystery of the misbegotten finds its chief solution in the gland condition of mothers and that all the curious and rarefied speculations, antique and modern, fall to the ground before another demonstration of the physical nature of all things. We have long been aware of the falsehood of the once generally maintained notion of the inheritability of most diseases. Human ailments, excepting certain specific blood diseases, are not communicated from parent to offspring. And unless they are of a kind to damage the reproductive cells of father or mother, all that can be held of the old doctrine is that some of them may so weaken the parent, particularly the mother, that the child may lack vitality as an organism or in some specific organs or parts. How great a part the glands play in this is not yet fully understood.

When all is said and done, we cannot fail to appreciate the magnification of the maternal importance in all matters of inheritance and prenatal influence on progeny. The familiar Biblical passage dealing with the visitation of the iniquities of the fathers upon the generations might well be rewritten to lay the accent upon the faults of the mothers, for nothing is so sure as that the health and normality of children becomes, with every fresh advance of the medical science, more and more preponderantly a female responsibility. A sad disappointment to egregious feminists, no doubt, but one that will have to be borne.

One of the astonishing intuitions of popular teratology may be worth noting. Most of us will remember that when the circus parade passed through the towns of our boyhood, pregnant women were warned not to witness them and the birth of certain monsters and freaks was explained on the theory that their mothers had seen and been greatly frightened by beasts to whom the misbegotten children were supposed to display resemblances or homologies. Apes and elephants were said to be specially dangerous. This is, to be sure, a very ancient sciolism, the classical Romans having warned their gravid women away from the amphitheaters. Just as they had noted the connection between drinking water and cretinism, so they had observed that women when subjected to shocks and frights were likely to bear strangely deformed offspring, which their lively imaginations assimilated to the animals. Endocrinology sets forth that any severe shock or emotional upheaval may cause a gland disorganization in a gestant woman sufficient to explain any grotesque.

If we remember that a very large proportion of the human beings locked away in jails, prisons and various semi-penal institutions are persons of subnormal, deficient or practically absent mentality, we will not need to seek for the connection between all this and the problem in hand. Most literate persons understand that feeble-mindedness plays its part in the

problem of criminality but very few realize how great that part is. Many prison wardens estimate that fully fifty per cent of their charges are mentally below par to some greater or lesser extent or in some special ways. When we consider that many of the more gravely deficient offenders are not sent to prisons but to special asylums, hospitals, training schools and the like, it is not difficult to make a rough summing of the probable proportion of deficiency to the total of criminality amongst us.

The fact is that criminals are of two broad types, the deficient and the defectives. They are either of subnormal mentality or of faulty mental or nervous constitution. Which class numbers the most individuals in its ranks cannot be said at present, but it does not matter, since it is now certain that both types are similarly produced. We have seen something of the genesis of the deficient and we shall encounter the defective further along.

CHAPTER III

MODERNITY AND WOMANKIND

Ye shall know them by their fruits. Do men gather grapes of thorns or figs of thistles?—MATTHEW VII, 16.

ANY man moderately familiar with the indicia of mental and nervous disorders will find playing at every street corner in the modern city the ultimate tragedy of the race. He has but to stand and watch the passing crowd. In the gait and posture of his mortal brothers, in the eccentricities of carriage, the shapes of faces, the gape of mouths, the faulty play of muscles, the empty merriment or dull imperturbability of countenances, he will read the ruin of stocks and sense the sundown of peoples.

The scene never changes; the play never ends. Year after year the motley and pathetic procession passes, its individuals limping from the wounds of destiny, staggering under the afflictions of blind gods, mumbling and raving to the torturings of drunken furies. There goes the fool with his hollow face and here pauses the moron with her farded cheeks and infantile simper. Yonder the incipient maniac mutters and rolls his eye and nearer the unhappy neurotic scowls at life that whips him with anguish.

Few can watch this promenade of specters with composure. Indeed, only the ignorant can survey the modern crowd with equanimity, for he who sees what passes to-day and knows what was yesterday also understands that this thing before him is a growing disaster. He knows that since the beginning of the industrial reorganization of the Occident, little more than a hundred years ago, feeble-mindedness has increased at a rate so alarming as to seem unbelievable. He knows that insanity, neurasthenia, nervous collapse and all manner of mental de-

ficiency and defectiveness are mounting with every fresh census, that the states cannot build asylums and medical institutions fast enough, that in this country more than one-fourth of the total revenues of our states is now devoted exclusively to the support of helpless dependents—the brokendown, lack-witted, the insane and the criminal.

The precise statistical evidence of these facts is not easy to produce for a variety of reasons. First of all, statistics on feeble-mindedness and defectiveness have been kept only recently and most laxly. Again, it is well known that many deficient and defectives are never registered at all and that by far the greater number of only slightly subnormal types are not even suspected unless some chance misfortune brings them under the observation of a specialist. In spite of the wide vogue of intelligence tests and the mad sweep of psychological experimentation, there is still no satisfactory summary of actual conditions to be had. At best we can get no more than suggestive glimpses.

On the question of general dependency we may accept as fairly complete a government bulletin issued in 1924. To quote:

The Department of Commerce announces that on or about January 1st, 1923, there were 893,679 persons confined in federal, state, city, and private institutions for defectives, dependents, criminals and juvenile delinquents, hospitals for the mentally diseased, institutions for feeble-minded and epileptics, homes for adults and dependent or neglected children, penal institutions and almshouses, etc.

The report reveals that there were on the day in question 348,174 patients in asylums for the insane, institutions for the feeble-minded, psychopathic wards and hospitals for epileptics. At the same time there were 29,385 juvenile delinquents under lock and key.

In other words, nearly 900,000 known dependents are being supported in the United States to-day. The number of suf-

ferers outside the institutions or in institutions not included in the government report, which is admittedly incomplete, will surely bring the total to many more than a million. So we must count one per cent of the population—one person in every hundred—among the dead losses to culture, among the liabilities of civilization.

No one conversant with conditions in this day will fail to recognize the inadequacy of these figures, however, especially if we are trying to reach a comprehension of the total amount of insanity, feeble-mindedness and criminality in the country. The contrast between the number of criminals in prison and the actual criminal population has already been noted. As regards the insane, every psychiatrist knows that the numbers actually in the asylums represent but a moderate proportion of the total. Only the worst and most dangerous known cases are confined there. Every one familiar with the situation knows that half-treated patients are constantly being discharged from the public asylums because of the continually swelling clamor of fresh applicants. We are only too familiar with the mild cases of manic-depressive insanity, dementia præcox, paranoia and other less grave psychopathic conditions floating about the country at all times.

If we try to arrive at the amount of feeble-mindedness in the country by considering the number of such sufferers in institutions we come face to face with even worse difficulties, for nothing is more certain than that only a small percentage (of the actual sufferers) is confined or even registered. Feeble-mindedness is not generally looked upon as dangerous and is obviously less troublesome than the graver forms of insanity. So it follows that parents and relatives shelter and conceal many serious cases of deficiency and refuse to recognize many milder instances of this trouble.

The much quoted and much abused mental tests taken in connection with the selective draft in the course of the World War, give us something illuminating even though no accuracy

ought to be asserted. Tests were applied to about 1,700,000 of the drafted men in various training camps. Most of these men were between the ages of 21 and 31 years, some between 19 and 21 and some older than 31. The so-called Alpha test was used in most cases and the results have been published in great detail in the memoirs of the National Academy of Sciences.

To state these outcomes roughly and within the understanding of laymen, approximately ten per cent of the tested men were found to be of the mental age of ten years or below and so considered unfit for military service. Fifteen per cent more were only eleven years old mentally. What must disturb us still more, only about half of the men tested (and these must be looked upon as representative of the whole army) were able to register a greater mental maturity than thirteen years. Only a fourth of the total was considered really sapient and about 5 per cent were rated as possessing "superior intelligence." The technical details, intelligence quotients and other ratings have been too frequently published to need repeating; neither do they mean anything to the general reader.

It is certain that these tests were not made under the best conditions and that many elements entered into their taking that may have exaggerated the result. It is not to be doubted that many of these young men were puzzled, frightened and upset by their novel surroundings, with the result that they gave poor responses. Many others apparently pretended ignorance or defectiveness for reasons all too well understood. Again, these authors are as ready as any to deprecate the continual testing of citizens by half-baked and poorly equipped experimenters and job holders. Nothing is more certain than that the vogue of psychology has brought into the field numbers of persons poorly suited to the craft both by temperament and by lack of scientific education.

Yet, when all is said and done, the final specific objection to the army figures is simply that they are too appalling to be credible, or that they do not agree with the notions of certain

faddist doctors and others. Aside from pointing out that this is no argument at all, we need not dwell on the point. Even if, as seems advisable, liberal deductions must be made from these totals, the revealed situation is still not short of terrifying. The mere fact that ten per cent of our conscripts, young men in the very flower of their youth, had to be rated too low for even the scythe of death, must strike the sense and the heart of the country. How incomplete and inefficient even this culling out proved to be, may be read from the endless lists of young men whose nervous systems were found unfit to bear the strains of war after they had reached Europe and come within sound and sight of the great ordeal.

These figures will testify fully enough to the wide spread of mental deficiency and defectiveness. We have still, however,

FIRST ADMISSIONS TO ALL INSTITUTIONS

Year	TOTAL		Civil State hospitals	Hospitals for criminal insane	Private institu- tions
	Number	Rate per 100,000 population			
1909	5,784	65.0	5,222	160	402
1910	5,944	65.2	5,564	128	252
1911	6,228	67.5	5,700	159	369
1912	6,300	67.4	5,742	183	375
1913	6,650	70.3	6,061	246	343
1914	6,789	70.9	6,265	203	321
1915	6,690	69.1	6,204	183	303
1916 (9 months)	5,269	53.6	4,903	130	236
1917	7,340	73.6	6,877	166	297
1918	7,244	71.7	6,797	159	288
1919	7,277	71.0	6,791	138	348
1920	7,245	69.8	6,573	149	523
1921	7,385	70.2	6,939	163	283
1922	7,418	69.6	7,015	154	249
1923	7,495	69.4	6,900	185	410
1924	7,435	67.9	6,933	158	344
1925	7,903	70.8	7,435	149	319

to see what evidence there is of the increase of these troubles. The figures on insanity offer the best guide, since it is well known that criminality, general feeble-mindedness, nervous troubles and insanity all follow the same general arc of rise and fall. For this reason the official figures of the state of New York given on page 124 will be of pertinence.

No one needs to be told that the span from 1909 to 1925 is too brief a period to offer conclusive evidence, yet the signs of an upward trend are there and must be accounted for.

The figures on mental disease gathered by the United States Census Bureau are more enlightening:

<i>Year</i>	<i>Number</i>	<i>Per 100,000 of the Population</i>
1880	40,942	81.6
1890	74,028	118.2
1904	150,151	183.6
1910	187,791	204.2
1918	223,957	217.5
1920	232,680	220.1

The bulletin of the Department of Commerce issued in July, 1924, which brings the official figures up to January 1st, 1923, shows a total of insane persons or sufferers from mental disease, not including the feeble-minded or epileptic, and listing only those confined in hospitals for mental disease or in the psychopathic wards of general hospitals, amounting to 292,299 or about sixty thousand more than in 1920.

A survey made by the National Commission for Mental Hygiene bears out the census in the most striking way. The following figures give the results, to quote the report, on "patients suffering from mental disease":

<i>Year</i>	<i>Patients</i>	<i>Rate per 100,000</i>	<i>Population</i>
1890	106,486	170.	63,000,000
1894	150,151	183.6	66,000,000
1910	187,791	204.2	92,000,000
1920	232,680	220.1	106,000,000

This rising tide of madness is not limited to the United States but is general over the Occident. In the British Isles fairly accurate figures are available from 1859 to the present. The population increase between 1859 and 1907 for England and Wales was 186.8 per cent whereas the number of the registered insane increased during the same period by 354.8 per cent. There were 60,027 insane in these two countries in 1874 and 123,988 in 1907. Just before the war this total had again markedly increased, once more out of all proportion to the growth of population, but since the war, for reasons which are not clear, there has been a falling off in the number rather than the expected great increase. There were, for instance, 131,557 insane being cared for in institutions on January 1, 1925, only a moderate increase over the 1907 figures. Leading authorities, however, remark that the post-war decrease of madness is apparent rather than actual.¹

Similar rapid increases in madness, accompanied by slow rising of the population totals, will be found in nearly all European countries.

There is a tendency among optimistic gentlemen of the profession to deprecate any alarm at such figures and attempt to explain them away. One of the excuses is that public asylums for mental sufferers have been greatly enlarged and increased in number in the last forty-odd years. But every doctor and every sensible man knows that these newer or larger institutions have been provided only grudgingly and slowly. To get the money for them has always required prolonged pleading and arguing by physicians and the public-spirited laity, backed by the clamor of the swelling armies of the mad, pounding at the gates. The legislatures have never appropriated money for asylums until scandalous conditions forced such action. Every informed man understands this and there is not a qualified specialist in the country but knows that the present provision is again wholly inadequate. The streets are full of madmen.

¹ Encyclopedia Britannica.

Again, it is often argued by perfectly serious statisticians and other optimists that the increase in insanity is to be largely set down to the rise in longevity, to the greater number of persons who live to be old and become senile or afflicted with the other mental disorders incident to advanced years. These gentlemen show the symptoms of frantic seeking for pleasant explanations, for their hypothesis is based upon not fact but fancy, upon ready guesses and ignorance of the truth.

The statement has often been printed in recent years that the average span of life has been considerably lengthened. Of this there can be no question but the gain has all been made at the head of the column, none at the foot. We are saving the lives of millions of babies of the kinds that perished in their first months under the old conditions—many of them unfit for life and doomed to afflict mankind. We are prolonging the lives of many weaklings that would be eliminated under conditions of nature and formerly perished some time in their nonage. We have mastered most of the children's diseases and the scourges of youth, diphtheria, smallpox, scarlet fever, typhoid, croup, measles, malaria and many others. The result is that millions now survive to middle life that would never have seen adolescence in earlier times, millions that would never have reached their first birth anniversaries. The lengthened life terms of these individuals, when computed with the whole experience of the people, raises the average tenure in a remarkable way and leads to the erroneous conclusion that the remaining expectancy of the mature man or woman is greater than formerly.

The facts are not hard to arrive at. In 1918 the Actuarial Society of America issued its well known report, "The American and Canadian Mortality Investigation Based on the Experience of Life Insurance." This was the result of prolonged researches among the data of the large companies in the United States and Canada by the foremost authorities. The former

experience of the companies with mortality in fixed groups was used to establish a norm of expected deaths annually within certain age divisions. This norm was then compared with the actual modern experience of all companies. The results are expressed in percentage points, 100 per cent being the norm based on previous experience, to which the actual modern results are to be compared.

In the first insurance year the young risks, between the ages of 15 and 24 years, furnished 71.4 per cent of the expected number of deaths, while the oldest group, older than 55 years, showed only 47.6 per cent of the expected deaths. The risks of all ages yielded only 63.4 per cent of the normal expectancy of deaths, apparently showing that men up to the age of about 55 are living longer than formerly—at least those of them still able to pass insurance examinations.

In the second insurance year, which means, for those who do not understand the term, the second year of the life of the policies, the average actual deaths rose to 84.1 per cent of the normal or old expectancy. In the third year the deaths among all age groups had mounted to 87.4 per cent of the old experience. In the fourth year it was 89.6; in the fifth, 91.5; in the sixth, 98.6; in the seventh, 101.2 per cent or above the older averages: in the eighth year, 97.7; in the ninth, 104.4; in the tenth, 96.4; in the eleventh and subsequent years the average was almost exactly equal to the older experience, roughly 100 per cent.

In other words, as the average age of the insured persons mounted—beginning at the age of 15 years and extending to the oldest insurable risks—the experience gradually approached the old figures and percentages. A gain was thus observed among the younger men, which is to say that there were fewer untimely deaths among the young. But once the group had passed a vague line somewhere between the fortieth and forty-fifth year, the insured men and women began to die off just as rapidly as in earlier generations. Indeed the fidelity of the new

experience to the records of the old is so nearly parallel as to be overwhelmingly convincing.

For fear some one may suggest that the insurance company figures might conceivably contain some practical bias, we cite the confirmatory opinion of Professor J. W. Glover, the Federal Census Bureau authority, taken from his latest (1921) report, page 18:

"There seems to have been a general improvement in mortality for all classes for the younger ages, that is to say to about the age of 40 for men and 50 for women, except for the negro population. Above these ages there is no improvement. It therefore appears that the efforts to improve mortality have been successful for the younger ages, and up to 40 or 50, depending on sex; but for the higher ages, that is beyond 50, the table indicates no sign of improvement."

Thus, since there has been absolutely no increase in the proportion of persons who live to old age and are subject to the mental troubles of that period, there can be no validity in the arguments advanced. We must come back to earth and face the fact that insanity has actually and undoubtedly become much more common within a generation and that the causes are social and economic.

If we accept the opinion of competent specialists in the fields of psychiatry and neurology, namely, that this menacing increase in nervous and mental maladies had dated from the beginning of industrialism, we strike at once upon the root cause of the trouble. Modern life itself is responsible for the breakdown of populations, for the tide of madness, idiocy and crime.

If we stop again to think of the human being as a mechanism capable of adapting itself to its environment but strictly limited as to the scope and speed of its adaptability, we will not lack for a hint of the method by which modern life has been undoing modern man. In the last hundred years the whole nature of existence has been overturned. Peaceful agricultural popu-

lations have been withdrawn to crowded cities and the toil of the mine, the loom and the mill. The machine has invaded every nook and corner of the world and it has, as Samuel Butler foresaw, enslaved its makers. Inventions of all kinds, especially those dealing with locomotion and intercommunication, have so speeded the rate of living that the man of to-day may be said to live a dozen lives. This is hardly an exaggeration. When we consider the leisurely pace at which all the business and pleasure of the world were conducted even two generations ago we cannot fail to see how life has been complicated and compressed.

Then ships crossed the ocean in six weeks, if luck was good, instead of in six days as now. It took three days for mail to pass from New York to Philadelphia instead of two hours. The time of passage from New York to San Francisco in 1850 was three months at the minimum. Then, even in the greatest cities, amusements were temperate and few. Pleasure was, compared with to-day's habits, a contemplative and restful affair. In the field of mental impressions, the man to-day receives and must attempt to digest as much in a day as his grandfather absorbed in a month.

Much as man has been taught to look upon the modern inventor as his great ally and friend and deeply as he has come to respect steam transportation, power machinery, motor cars, telegraphs and telephones, wireless apparatus and motion pictures, radio instruments and flying machines as the tokens of his culture and the badges of his power, these implements and the social institutions and habits erected about them have become dreadful weapons turned against the nervous constitution of the western races. It is no ill-considered utterance if we say that time has yet to prove whether these things have not done humanity more harm than good.

The shocks and strains to which the delicate nervous system of the modern human animal is being subjected are so constant, so intense and so far beyond any previous experience of man-

kind that the load has in some sense become too heavy to bear. While men and women have certainly adapted themselves in a surprising measure, it is still apparent that the evolutionary processes have not been able to keep pace with the inventive faculty.

The struggle for existence has become, through the operation of the mechanical and industrial age, so keen and so fierce that more and more of the less sturdily equipped members of the race have been forced out of the running. They have simply broken down nervously. They have either become derelicts and dependents or they have become marauding rebels against the system which their nervous constitutions could not support—criminals, in other words.

Every one understands, to be sure, that it is only a part of the population which cannot keep the pace and which breaks down under the strain. These individuals are what the neurologist calls the less stable or less balanced creatures of the times. They are undone at various stages of their lives. Some droop and fail in adolescence. Others manage to keep up the combat for some years, only to crack under the strain before middle life or to sink into early decay when happier men and women are at the height of their powers. But a vast number of others is already ruinous at birth and it is this fact which again gives us the clue to the general causation of these weaknesses and faults which distinguish individuals doomed to disaster from those able to meet and conquer life—or wring some sort of endurable compromise from it. We must recognize that, with such exceptions as are obvious, these defects are the result of prenatal conditions. We are, hence, forced to look once more at the mothers of the race and observe the manner in which they bring into the world the countless misfit.

For a long generation, in the course of which the evil flower of feminism was brought to its present poisonous bloom, we have been assured by various indiscreet ethnologists, travelers, anthropologists and amateurs at sociology, that woman is the

equal of man, that in many tribes she has taken the active and man the passive part, that her so-called subjection is a purely social and economic matter and that if her mental and physical faculties are not in all respects on a parity with those of the male, this must be charged to the circumstance that for many centuries she has been denied the privilege of using and developing her latent powers and perfections.

There is no need of engaging in feminist or anti-feminist polemics and we need not concern ourselves in any way with the comparative virtues and potentialities of men and women. The sexes are not and can not be equals for the reason that they are biologically and unalterably different. Not only have they been equipped physically for very different functions in the natural scheme but their whole nervous and glandular constitutions have been, through uncounted centuries of development and adaptation, peculiarly fitted for the special labors and functions which are theirs. More than that, woman cannot undertake the work and the social habits of man without defeminizing herself and making herself unfit for the all-important labors which are her chief responsibility to the race.

We may observe that in lower creatures the division of labor or function is sometimes carried to remarkable lengths. Our familiar busy bee, for instance, is of three sorts or sexes. There is the single female or queen, whose entire life forces are devoted to the laying of eggs. There are the many males (drones, so-called) which have no responsibility but to impregnate the queen and die in the nuptial flight. But the vast majority of all bees are neuters. They do the work, they build the hive, gather the honey and perform all the tasks not immediately connected with procreation and the survival of the species. In man a somewhat different division has been provided for by the great mother.

Nature, in working out her human economies, evidently found it necessary to assign one part of the activities vital to the preservation of the species to one sex and the other part

to the opposite. To make possible the performance of these two activities she delegated to one sex a special chemical and nervous constitution which fits it for the reposeful and quiescent task of reproduction, for brooding upon and nourishing the offspring. To the other she gave a chemical and nervous mechanism which equips it for activity, for conflict, in short for the meeting of the strains and competitions of life, the struggle for survival.

When and how this came about we do not know, though we observe the same state of affairs and the same glandular and nervous contrasts between the male and female in all the mammalia. Neither does it matter whether the contrast always existed or was brought about by slow adaptations. What is of importance is the fact that, whatever the origins of the condition, we find woman possessed of an anabolic constitution, entirely different from the catabolic nature of man. We know, anatomically and from general clinical observation, not only that woman should not but that she can not compete with man or attempt to expand her zone of activity into his. Finally, we now understand the full tragic results of such aggrandizement on her part. It is the women who, whatever their actuation, enter into competition with men or are subjected to the strains and stresses of life who become the mothers of these uncounted defective, insane and criminal individuals who are the scourge of the world and a torture to themselves.

In making this assertion, one is conscious of having been frequently and sharply reminded that woman to-day is forced to make her own living and that she is the victim rather than the promoter of modern social and economic conditions. There are two answers to this common sally. The first is that women are upset and ruined for the purposes of maternity as much by feverish amusements and social competitions as by working for their living. The economic and industrial factor is by no means solely responsible for the evils in question. The second and complete answer is that if the conditions of modern life

are responsible, as no one questions, then these conditions ought to be changed, no matter whose comfort or desires such changes may invade. If we fail to correct them nature will do the work with a ruthless hand, as is her wont. We must simply and impartially recognize the causes of the situation and realize their catastrophic possibilities.

If we wish to see why women are less suited to endure the shocks and strains of active competition in the world, we have only to look at the most obvious details of their life and function. They undergo two great chemical and glandular upheavals in the course of their lives, the first at adolescence when they emerge into fruitfulness, the second at the menopause, when their reproductive powers are exhausted and their labors concluded. At both these crucial periods women are intensely disturbed chemically through the fundamental changes taking place in their endocrine glands. These internal revolutions are attended by severe emotional storms and disturbances, as every doctor and every intelligent layman can testify. It is, of course, true that males also go through a period of gland upheaval at puberty, but the disturbance is less severe and it is also final.

In the case of women, on the other hand, this glandular and chemical upheaval is repeated every month of her useful life in the throes of menstruation. No woman who understands herself and no intelligent husband need be told that at this time women generally—some more than others—are more or less gravely affected by overactivity of the endocrine glands. They are prone to tears and other outbursts of emotion, their judgment is affected and they are, to use an ordinary term, off their balance.

The neurologist understands that it is at the menstrual period that epileptic women usually exhibit their symptoms, that at this time the evidences of slight psychoses and neuroses are most likely to reveal themselves and that all manner of mental and nervous troubles are then more marked. The endocrinol-

ogist also observes that at menstruation the one important visible gland, the thyroid, becomes enlarged or swollen and overactive. He knows that this condition also prevails during pregnancy, when the glands must be overactive to meet the emergency of generation. Finally, the thousands of cases studied at Post-Graduate Hospital reveal clearly that disturbances of this thyroid gland, which has so important a bearing on emotional distresses, are far more common among women than among men. These findings have been confirmed from other sources.

But the interesting point and one of the most significant fruits of the present investigations has to do with the cause of these gland maladies in the human female. As already suggested, shocks, terrors, fears and all grave alarms have a tendency to produce glandular upheavals in women, particularly during pregnancy, though by no means exclusively at that time. More important still is the discovery that strains, thrills, unsuited employments, grief, worry, unhappiness, constant nervous tension and other emotional stresses are likely to bring about disbalances of their glands and that these troubles are more than likely to persist and affect the health and mentality of subsequent children. Thousands of cases examined and investigated at Post-Graduate have revealed that, with only the most obvious exceptions, the birth of deficient children has always been attended by emotional upheavals in the mothers during pregnancy, and it has been easy to demonstrate that gland disturbance was present. The evidence needs to be sketched.

To this end a few representative cases have been selected and will be set forth.

Plate 9 shows a hyperthyroid mother with her child. The boy suffers from a formative type of mental trouble, being gravely deficient or feeble-minded. He is afflicted also with spasticity of the limbs, due to the improper development of the

motor centers in the cortex. This complaint is very common among the children of hyperthyroid mothers.

Investigation in this case revealed no feeble-mindedness or other mental trouble in either parent or in the ancestors. There was also no record of injury and no evidence of infectious disease in the mother. It was, however, determined that she was intensely shaken emotionally in the course of her pregnancy with the child in question, and evidence of the root of this disturbance was found when she brought the child to the clinic. The mother was seen to be suffering from a well-marked case of Basedow's disease. Her basal metabolism revealed an excess of 57 per cent. Her appearance at this time may be noted from Plate 10, photograph A, in which the protrusion of the eyes and the goiter are both visible. Contrast this woman with photograph B, which shows her after several months of treatment, with the gland swelling reduced and the exophthalmus abated. She had also gained twenty pounds in weight. A fresh set of tests was made at this time. The basal metabolism was normal and all nervous and emotional symptoms had disappeared. The woman will, in all human probability, be able to bear normal children hereafter.

In the preceding chapter the glandular causation of Mongolian idiocy was explained and cases were cited showing that this form of mental deficiency usually occurs in children born to women in the pre-menopause stage of life or to women whose glands have been disordered by the toxins and drains of infectious diseases. But Mongolism has also frequently been found among strong young women at the height of their reproductive powers in whom there was no history of infectious disease or other obvious drain upon the physical resources. Many scores of such mothers and their Mongoloid offspring have been studied in the clinic at Post-Graduate and the invariable finding has been that emotional disturbances, causing a gland upheaval and chemical disbalance in the mother, have been the first cause of these malformities in the children.



PLATE 9



PLATE 10-A



PLATE 10-B



PLATE 11

A representative case, for which a photograph permission is lacking, concerns a young native-born mother of Nordic stock with her 5-year-old Mongolian child. She was 21 years old when the baby was born. There was no trace of hereditary fault in the mother or father and none discoverable in the ancestry. Neither was there any record of insanity or feeble-mindedness in collateral relatives. The mother was not ill during pregnancy and had not suffered from any injury or infectious disease within the period when such troubles might have had an effect upon the child. On the other hand, this history was revealed:

At the time of her marriage, when she was 20 years old, this mother was employed in an office and continued to work for the reason that her husband's income was small. Just after she became pregnant and was considering resigning, her husband lost his position and she was compelled to continue at work until the end of the fourth month of pregnancy. Her husband having then found employment, she quit and remained at home. The strain had, however, been too great and she was sadly emotional. She worried a great deal, wept every day and was depressed and homesick for her mother and relatives who lived in another city. Her nerves were unstrung and she was unable to compose herself or get proper rest. The child was born at the end of the natural period but was obviously deficient from the beginning.

Plate 11 shows a Semitic mother of thirty-five and her son of eight years. She was, accordingly, twenty-seven and in the flower of her young maturity when the boy was born. He is an imbecile suffering from Froelich's syndrome, a disease of the pituitary gland, which results in the obesity and dullness evident in the picture. The mother, it is to be noted, is of an entirely different constitution. While she was pregnant with this child she was greatly worried, because of financial and domestic difficulties, suffered from grief and appears to have been unwilling to bear the child.

Plate 12 reveals another case of Froelich's syndrome, affecting the central figure, a Semitic girl of 11. She is more than two years older than her sister, who stands beside her. The mother, it will be observed, shows the indicia of a disturbed pituitary gland in her obesity and hebetude, but we are attracted by the fact that her younger daughter does not suffer either from the syndrome or from the epileptic attacks which disturb her older sister and attacked the mother in her youth. Close inquiry in this family disclosed that while the mother was bearing the elder daughter, her age being then 22 years, she was overworked, financially in bad circumstances, worried and distressed. Two years later, when she carried the younger child, her general situation was improved and she bore a girl who is evidently not affected. Here again is evidence of a variable factor, evidently glandular health or unhealth.

Plate 13 is that of an Irish immigrant woman with her two children, a boy of 8 years (standing) and a girl of 5 (in the mother's lap) in whom another contrast is to be noted. The boy, born when the mother was twenty-nine, is normal. The little girl is, on the other hand, a Mongolian idiot. At the time of her gestation, according to the parents, they were in great poverty, the husband was for a time out of work and the wife worried, grieved and lost weight. She was frightened and shocked in an automobile accident while carrying the child, but not at all injured physically, there having been no collision or other violent mishap.

In Plate 14, again, we see a mother still in rugged physical condition, being forty-one years old and normally still able to bear healthy offspring. In the course of her gravidity, however, she was forced to help her husband with his work, was constantly worried, like so many of the others, over financial matters, wept a great deal and was sometimes hysterical. The result of this disordered gestation was the unfortunate little girl, also a Mongolian idiot. Pre-menopause disturbance may have played its part here.

Plate 15 shows a mother and child who figure in a still more interesting case. The woman in this picture is 29 years old and her baby nine months. Both parents are native born Americans of Irish extraction. Again there is no hereditary history or record of infectious disease or injury, but the record is complicated by the presence of epilepsy. The infant is a Mongolian with epileptic symptoms. The mother, though apparently healthy and fairly strong at the time the child was born and for some years earlier, had also suffered from epileptic convulsions in her own childhood. Thus, since epilepsy is clearly a glandular disorder of a kind still recondite, though hundreds of cases have been successfully treated at Post-Graduate, there is a history of gland affliction going back to the infancy of the mother. This fault repeated itself in the offspring, so that the claim of hereditary causation might reasonably be set up were it not for the clearer evidence of endocrine influence.

At the time of her pregnancy with this child, the mother was, as in the other examples cited, worried about economic and other material matters and gravely upset by the personal situation. Her emotional condition was serious to the point of explosiveness and she reports that she was so nervous that she was actually in torment a great part of the time. She wanted children yet dreaded the birth of this little son—and with good reason as it turned out. In this case it is only too apparent that the mother was suffering from infancy from a glandular defect, whose symptoms became dormant in her maturity. Later, in the throes of pregnancy, this affliction reasserted itself in the form of a chemical disbalance which produced in the child the same epileptic trends which the mother had known in her youth, and also caused the graver Mongolism.

If considerable attention has been devoted to the Mongolians, the reader is not to conclude that any direct connection is inferred between this form of mental deficiency and criminality. The Mongolian idiot is, of course, too low grade and too help-

less to figure in crimes. The purpose of these exhibits is rather to demonstrate, by means of clear and emphatic examples, the influence of disturbed gland conditions in mothers upon the production of all kinds of abnormal children and the precedent connection between stresses and emotional upheavals and the gland unhealth of women.

Even more clear and dramatic demonstrations of the effects of strains, conflicts, unsuited labor and emotional uproar can and will be given.

Plate 16 represents an Italian immigrant family of five, the two younger children born in this country. The parents, of Calabrian peasant stock, were attracted to America by the tales of a fellow villager who had returned from New York, bringing with him the evidences of prosperity. This couple soon pulled up their ancient roots from the home soil and came to New York with their small daughter. They had very little money but they were strong and healthy and hopeful. They wanted, more than anything else, to give the little girl, who is both pretty and bright, the advantages of an education.

But affairs did not prosper here. The father was shortly out of work and his wife was forced to go out and take a job as janitress or scrubwoman in an office building, where she worked at night. While thus employed she became pregnant with her second child, the elder boy. She was a strong woman of good size and robust health. She did not think the work would do any harm. Besides, it was necessary. But before her pregnancy had advanced far this woman was afflicted with a powerful nostalgia. She felt deserted and friendless in the new country. She could not endure the work, the strain, the bustle and the loneliness. Her emotions were overwrought. She wept frequently. The rest and repose which every woman needs for the vital labors of child creation were denied her. Instead of the peaceful normal environment of her home village, where her stock had grown fast through the centuries, living simply and naturally, she was subjected to the fires and



PLATE 12

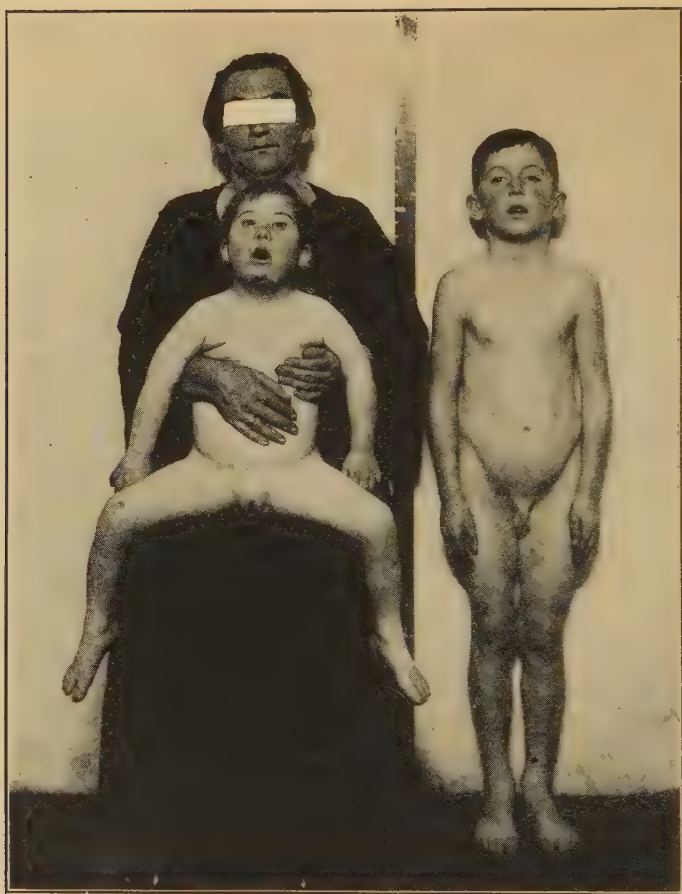


PLATE 13

FREAKS IN HEALTHY FAMILIES

torments of a new, wild and unaccustomed civilization. The result is branded upon the child, a microcephalic idiot of the kind often exhibited in circus side-shows and freak museums for the amusement of the ignorant and brutal crowd.

This father and mother were disconcerted by the birth of such a child but had, of course, not the slightest hint of the reasons for the disaster. They merely considered it another of the afflictions which a wise deity had prescribed for them. The mother continued to scrub floors as soon as she was able and the father went on about his business, trying hard to find steady employment. He succeeded badly enough and the woman went on with her torture during another pregnancy, with the result of a second microcephal, quite as tragic as the first.

The reader is asked to mark the contrast between the pretty, happy, intelligent girl, born in Italy, before her mother was subjected to her anguish, and the miserable monsters who are her brothers.

A similar case where the progression of gland disturbance and recovery is carried a step further was treated at Post-Graduate. The photograph permission is lacking. It is that of a mother of Irish birth and race and her four children. The eldest boy and the younger girl and small boy are normal and up to the standard. The second child, or eldest girl, is an imbecile of the formative type. The family history reveals a complete explanation of the trouble and its causes.

When the oldest boy was three years old his parents came to America and settled in New York, where the mother again became pregnant, three months after landing. The family was not in a suitable economic situation for the arrival of more offspring. The husband was working but his pay was small. His wife felt that she did not want to bear children at that time. She worried about the financial situation, but she was still more upset by loneliness and homesickness. She was far from any one she knew well. She felt the unfriendliness of a great

city in a foreign land. Everything was strange and cold to her. She was frightened, overwhelmed, desperate. She wept a great deal, lost weight and showed other symptoms of pathologically overactive glands. The little girl that resulted from this troubled fruitfulness was, of course, retarded from the day of her birth. Owing to the disturbed internal chemistry of her mother, some important parts of her brain failed to form and she is consequently a hopeless imbecile, whom no power on earth can help.

After the birth of this unhappy girl, the financial circumstances of the family improved, the mother made friends with others of her countrywomen in New York, she became more used to the new home and the new conditions. Her excitement subsided and her gland disturbance was abated. Two years later she was, accordingly, able to give birth to a healthy girl and still later to a healthy boy.

This conversion from unhealth to health is typical of a whole class of immigrant mothers, most frequently those of the Semitic, Latin and Celtic races. These imported women frequently give birth, in the years immediately following their arrival, to one, two and even three abnormal children. Later they adjust themselves to their environment, with or without medical aid, and they then resume the production of normal children.

Let us remark that these glandular disturbances in mothers which take their rise from adverse environmental conditions are by no means limited to immigrants or to the poor, though these are probably more obviously and grossly affected. Let us also note that such disturbances bring about all grades and shades of deficiency and defectiveness, beginning with the low types here cited and ranging up to children in whom the defect can hardly be noted or cannot be discerned at all until later in life when it brings about some enormity of behavior. Thus we shall have suggested the scope of the evil influence of modern living conditions upon mothers.



PLATE 14



PLATE 15

VARIOUS CAUSES OF DECADENCE

The kinds of environmental or social influences that may upset mothers and cause the birth of children more or less markedly deficient or defective are, of course, too many to be enumerated. The poor woman who must go out and drudge while she is nourishing a new life in her womb stands at one extreme of the line. At the other stands the wealthy and indulged woman who exhausts and debilitates herself with social rivalries, excitements, dissipations, political activities and all the multitude of interests and concerns with which women of neurasthenic tendencies have burdened themselves in this day and age. It is, of course, notorious that numbers of the stupid, neurotic, abnormal, worthless and insane are born to women of great wealth, who have had every possible advantage that culture and luxury can provide. The birth of these children is commonly put down to the vague term, decadence. It is popularly believed that the son of an eminent man is frequently a dunce because the father reached the apex of development in his line and used up the last vitality of the stock. Pretty as the theory may be, the facts are on the other side. The true reason for the prevalence of decadence among the sons and daughters of the rich and the elect will be found in the indulgences and misguided activities of the mothers.

As a matter of fact, every neurologist of broad practice can confirm this statement from dozens of experiences with the women and children of our classes.

The modern girl of the lower and lower middle classes, who goes out of her parents' home to make her own way, or is forced to adopt this course, presents a broader and still more serious problem. Such young women, through the stress and strain of industrial and commercial life, very generally become glandularly and emotionally disturbed. The trouble may not be grave enough in most cases to cause any inconvenience or illness. It is usually not even severe enough to be noted by the sufferer, who knows nothing of such things and never suspects that to-day's nervousness and strain, yesterday's attack of emo-

tion and tears, last week's late hours, feverish dancing and incontinent running to theaters and moving picture houses in quest of thrills, are all symptoms of a disorder which menaces the very race, the stock of western peoples. These girls marry after a few years and soon produce children who are not, in most cases, gravely deficient or defective, but who are yet subnormal and of poor quality in every way. Such children fill the institutions and the prisons. They reduce the grade of the whole population. They swell the ever lengthening ranks of the inefficients and the dullards, and they make the burdens of living and progressing more onerous upon all who draw breath.

Since the connection between feeble-mindedness and criminality has already been pointed out, the pertinence of all this need hardly be stated. One aspect of the question of criminal causation is, however, peculiarly illumined by certain of the cases just cited.

In every great American city to-day the young gangster and general criminal of the first native generation offers a special problem to the authorities and charitables. Judges, police chiefs, investigators, juvenile officers, prison wardens, social workers and many others have repeatedly pointed out that the immigrant himself is only rarely a criminal, whereas his son is perhaps the most dangerous and persistent outlaw among us. There are, to be sure, the South Italian killers who belong to various evil secret societies, the men of several Levantine races who play a large rôle in commercial fraud and dishonesty and the imported agitators and firebrands, if they, too, may be rated criminal. But these men are, after all, exceptional. The average immigrant comes here to make a home and a living and he figures in the records of courts and prisons a good deal less than is popularly imagined. With his children the matter stands on another footing.

This prevalence of criminality among the children of immigrants is no new matter, as any consultation of old prison and



PLATE 16

police records in New York, the great dumping and breeding ground of many foreign races, will reveal. Seventy years ago and forty years ago our most troublesome criminals were native born sons of races then most strongly represented in the incoming tide of peoples. To-day their places have been taken by the first native generation of other races which have succeeded the earlier comers on the immigration rolls.

Many explanations have been offered for this condition. The natural disadvantage of the newly arrived foreigner, the slum conditions under which his children have often been reared, the revolt of these children against their backward alien parents, the natural disrespect for the laws and customs of a new country and many other interpretations have been put forward. Without wishing to dismiss them all it must now, however, be obvious that the deep underlying cause of criminality in the first generation of native-born citizens is this glandular disturbance of the mothers, which must afflict nearly all incoming women to some degree, with the result that huge numbers of their earlier offspring are defective in more or less subtle ways and therefore prone to evil influences and likely to revolt against our laws and institutions. This may seem a novel explanation of the city gangster and it may strike the reader as fanciful, but sufficient evidence of its soundness will be adduced as we proceed.

To recapitulate: Feeble-mindedness, in which the seeds of a vast amount of criminality repose, is constantly on the increase among us because mothers, both foreign and native born, are being disturbed nervously, emotionally and glandularly by the modern environment, by the conditions under which women live and labor in this day, by the stresses, the speed, the shock and the compression of existence. The results of this exposure of our procreatrixes may be seen most clearly in the gross idiots and imbeciles born of women, otherwise sound and strong, who have been emotionally distressed and therefore glandularly unbalanced during the all important months of child creation.

These children are symbolic rather than representative of millions of others, much less seriously handicapped, who have been born of less gravely afflicted mothers.

It must be said in conclusion that the present environment of woman is not in the main of her own making, though she has undoubtedly contributed to the situation by her revolt against nature, by her absurd quest of equality with a totally different creature.

But, whatever the causes of the existing menace, women will have to recognize their responsibility and move to correct the evils which have already inflicted on the race an amount of damage quite beyond mensurability or estimation. The future of mankind reposes with them. If the age fails to note the peril and correct the causes of the present decline of our stock, we shall have to begin reckoning from to-day the twilight of Occidental civilization.

CHAPTER IV

MENTAL DEFICIENTS AS CRIMINALS

“‘Diseased one’ ye shall say, but not ‘wretch.’”

—*Also Sprach Zarathustra.*

BUT what proportion of criminals are mentally deficient? It would be grateful to the vanity of man and convincing as an argument if facts might be brought forward to show that our felons and habitual law breakers are nearly all imbecile, or that the feeble-minded are proportionally much more numerous among those who get into prison than among those of us who manage to stay free. Unhappily, there are no data in this matter that the cautious student can accept without the most serious misgiving. Yet the most divergent and obstinate opinions are held.

A great deal depends upon the individual point of view and attitude, much more on the definition of mental deficiency employed or the standards and tests used and still more, alas, upon the prejudices and preoccupations of the various expert gentlemen who have addressed themselves to the solving of this riddle. The broad-gauged psycho-analyst, for instance, is likely to say that every true criminal is a defective of some kind, and this is the attitude of the educated intelligentsia and even of the humble present writers. On the other hand, there have been various efforts to measure the proportion of deficient among criminal groups and to compare the results with the masses of the population.

Sir Bryan Donkin, the British penal official, made one of the early estimates when he said that about fifteen per cent of British convicts were feeble-minded and later amended this statement to read that the ratio was not lower than 10 and

probably not higher than 20 per cent. These estimates were quoted in 1913 by Dr. Charles Goring, the anti-Lombrosian already mentioned, in a work in which he rejected the idea that mental deficiency was extra-prevalent among felons. Dr. William Healy (1915) opined that the feeble-minded among reformatory and prison populations would sum up to from 10 to 30 per cent, a most cautious latitude. And Dr. H. H. Goddard (1914) estimated that "from 25 per cent to 50 per cent of the people in our prisons are mentally defective and incapable of managing their affairs with ordinary prudence." But what are the definitions of mentally defective and of ordinary prudence?

Professor Carl Murchison (1926) assumes what he believes to be a violently opposite position after applying the Alpha test to a few thousand prisoners and comparing the results with those of his similar tests applied to enlisted men in the late war. He finds that his prisoners give a better mental result than did his soldiers and he reasons from this that low mentality plays no part in criminality—a prodigious leap. This author seems quite blind to the fact that his results show inferior mentality to be more prevalent than ever estimated by the authors he attacks. To choose one of his main tables, the testing of about four thousand native white criminals, he reveals that 46.2 per cent made an Alpha score of lower than 60. In other words, nearly half were morons or worse. Instead of recognizing that such results amply confirm all that responsible students have ever asserted, he takes great satisfaction from the circumstance that his tests show prisoners to be no more deficient than the rank and file of men in this country. If the claim had ever been responsibly made that only criminals were mentally retarded, or that mental deficiency and criminality were in any sense synonymous, such reasoning might have a little pertinence.

The real contention of scientific criminologists is, to be sure, merely that mental deficiency is common among criminals and

common among all groups, nations and races. This the mentality testers have been at great pains to prove. That being so, it is apparent that many of our lawbreakers are too ignorant and dull to take any account of laws, penalties, morals, customs, ethics and all the paraphernalia of the volitionists.

Intelligent and observing students needed no statistics to reveal the obvious facts in the matter—namely, that many offenders are mentally deficient in gross and palpable ways, that still more are of low intellectual power and that the great majority of convicts are from the stupid, unlettered and debased ranks, while only the rarest men inside prison walls are of genuinely high mental ability, education or intellectual attainment. These are matters too old and apparent to need much discussion and the exact proportions or comparisons are, accordingly, interesting rather than important.

Since, however, one of the fundamental contentions of this writing is that practically all inmates of prisons and all real criminals are either deficient or defective (in the senses previously defined) the proportion of the feeble-minded to the mass is of no importance whatever. What will be more interesting and rewarding is a brief review of the various recognized feeble-minded or formatively retarded types of human beings and a consideration of the special characteristics of the low-witted or lack-witted criminals.

When considering these unfortunates it may be as well, in deference to the hereditarians, to note first that there exist certain kinds of feeble-mindedness which are directly and truly inherited, one or both parents or close ancestors exhibiting the same stigmata, the same indicia, the same deficiencies observed in the patient or prisoner. We may leave this matter here with the mere statement, since more interesting facts bearing on the point will be adduced presently.

The recognized formative types of mental deficient, excluding the cases due to inheritance or trauma, may be briefly listed as follows:

The cretins, the Mongolians, the microcephals, the macrocephals (the little and the big heads), the cases of Froelich's syndrome, infantilism due to pluri-glandular disturbance, gigantism, eunuchoidism, certain kinds of Little's disease with aplasia of the cortex, porencephaly, and internal hydrocephaly due to malformation of the aqueduct of Sylvius.

But when these definitive kinds of deficient have been named—those whose peculiar symptoms and probable causation may be found in any modern medical manual—the study of the feeble-minded has been only begun. For by far more numerous and important to the criminal problem are the vague types of low-wittedness, the cases without specificity, without striking symptoms. All that can be said of them in a general way is that they exhibit a degree of intelligence either slightly or gravely lower and a general mental responsiveness little or much slower than the normal. Some of them are even bright and responsive in certain fields or areas and deficient only in certain others. The recently developed psychological tests, if administered by an intelligent and experienced psychologist, are almost certain guides to the mental rating or mental age of such unfortunates.

The thought that certain feeble-minded persons are lacking in some respects and not in others brings us to the peculiarities of some of the recognized types. If we will recall what was said in an earlier chapter (the first of this book) with respect to the effect of the hormones of the various glands on the temperament and character of human beings, making one man timid and flighty and another man aggressive and callous, we will not lack an explanation of the mental peculiarities, aside from their feeble-mindedness, exhibited by the various deficient.

The Mongolians, for instance, are never vicious. They are affectionate, docile, happy and grinning. They even exhibit a liking for mimicry which might furnish the imaginative with a bit of confirmation for Dr. Crookshank's theory to the effect

the Mongolians are a reversion to an orangoid state of phylogenetic development. Perhaps, however, we ought not to be so aloof toward our primate cousins. Was there not a whole French school of criminology which based everything on the imitateness of man?

The cretin, to speak of another common type, shows the characteristics of hebetude, subduedness, inactivity and timidity. Neither the cretin nor the Mongolian is dangerous from the criminological point of view.

On the other hand, many of the vague types of the feeble-minded, in whom there is an abnormality of the pituitary and interstitial glands, often accompanied by an exaggerated discharge from the suprarenals, are the most vicious and brutal criminals, committing all kinds of monstrous deeds. They are usually without feeling of humanity or pity, are morose, aggressive and bestial. Many of those horrifying and nauseating crimes which have filled the pages of newspapers with black type and the heart of mankind with terror and disgust have been the work of feeble-minded men and women of this division.

Or, we may take from the recognized feeble-minded class the Froelich's syndrome cases, whose chief endocrine manifestation is a serious underactivity of the pituitary, attended by disturbances of the other glands and arrested growth of the gonads. Persons of the Froelich's syndrome class are generally vicious, intractable, prone to thieving and likely to commit acts of cowardice and perversity.

These particular deficientes are even more interesting from the biological or evolutionary point of view. In the cases of Froelich's syndrome studied and treated at Post-Graduate has been found the clearest evidence that biological fluctuations and eventually mutations come about through the disordering of the glands and the disturbance of the chemical balance.

Cases have been studied in which the mother of the original generation showed no symptoms or stigmata of Froelich's syndrome and the father was a normal and intelligent man, with

no history of disease in which pre-causes might be found. But the mother, in these instances, was gravely upheaved emotionally in the gestation period and showed symptoms of more or less serious gland disbalance. Out of this situation was born a Froelich's syndrome son—not a complete case, to be sure, but a child afflicted with the typical physical characteristics and a moderate feeble-mindedness. Of course this boy, of the second generation, constitutes a variation or fluctuation, to use the terms of genetics.

Ordinarily, in these recognized and specific instances of feeble-mindedness, the sufferers are sterile or, if their complaint is not grave and they mate with normal individuals, the children are likely to show diminishing indicia or none at all. But in these Froelich's syndrome cases a variation, caused originally by gland disbalance in the mother of the first generation, has been transmitted through her son to the third generation, in which another typical Froelich's syndrome child was born with all the defects of the father complete or even exaggerated. Here we have a mutation, a permanent change, which will be handed on from generation to generation, until the stock dies out. It need hardly be said that the endocrine disease and consequent malformity inflicted on her son by the original mother was of a kind that acted upon the germ plasm, thus bringing about a true inheritance of defects and deficiency. The bearing of all this on the question of the inheritance of acquired characteristics, which has been moot since the days of Darwin, Weismann (whose germ plasm theory is especially affected), Haeckel and such recent claimants as Kammerer, is too evident to need special explanation.

But let us return to the feeble-minded and their special bearing upon the criminal problem. Nothing will strike the clinical investigator with more force than the fact that deficient of the same precise type may be criminal or non-criminal, apparently in response to nothing more than caprice or chance. One is forced to ask how it happens that two boys both af-

flicted with feeble-mindedness characterized by maladjustments of the pituitary and interstitial glands and seemingly affected with equal gravity, will go such different ways. One remains, all through life, a poor deficient, who does the world very little harm beyond being a burden to the public purse or a cause of constant distress and worry to his parents. The other boy becomes a criminal, commits every kind of depredation, is used by keener witted and more alert offenders and eventually commits some act of innate savagery and bestiality.

Here we must face the factor of environment, which will henceforward come in for more and more accentuation and study. The facts, as frequently observed, in connection with numerous contrasting cases of this kind, point to the conclusion that a feeble-minded person of a potentially criminal type may be saved from criminality by proper care and attention to the matter of social environment.

In other words, if we have two feeble-minded boys of the kind inclined to criminal or brutish acts by their mental deficiency and gland disturbance, one of them, if guarded and kept away from evil influences, may go through life to a harmless finale while the other, exposed to low company and baleful suggestions, will take into his deficient brain a series of perilous concepts, which will soon or late lead to the most abhorrent acts.

The connection between low-wittedness and the convict status has been stressed often by ancient and modern writers. Indeed, it is impossible to leaf through the work of any serious commentator, from Socrates to Nietzsche, from Sophocles to Shaw, from Seneca to Anatole France, without tripping over pitying or ironic references to the legal and penal disadvantages of the poor, the unfortunate, the low, the disinherited, the fools, the dunces—the lesser minded, in other words. "The pale criminal," Nietzsche called this man—"a mass of diseases," a "coil of wild serpents."

It is important to observe the characteristics of the feeble-

minded which incline them toward criminal conduct. We have already noted the most commonly exhibited traits—the brutishness and savagery which cause us to see in them a reversion to low ancient ancestries, to the wild man and the troglodyte. Such subnormal men are usually referred to in the popular language of the day as fiends. Nor is the appellation unjustified if one consults only the surface of their conduct. The instances are too numerous and terrifying to demand more than a single example:

A farm hand on a lonely property in one of the populous Eastern states, being feeble-minded and beyond persuasion, fell in love with the buxom wife of his employer. Having been repulsed in his oafish advances, he crept into the house at night and slaughtered the woman's husband and her two children with an ax, believing that such an act would clear the way to the realization of his desire.

Deficients of this and other allied types frequently exhibit an inability to foresee consequences, to make the mental connection between cause and effect. Any judge will be able to recount numerous instances of persons charged with crimes who dully pleaded that they had committed certain acts but without ever considering the results. Such lack of foresight or realization of the upshot of acts often seems incredible until we understand that the culprit is lacking in certain parts of the brain. Recently, in New York City, a young man was brought before the criminal courts, charged with having pushed a *femme du pavé* off the end of a dock to her death. The woman had resisted and he had casually thrown her into the inky river at midnight. On examination he was quite incapable of connecting the innocent "shove" he had given her and the consequences of death. Indeed, he was able to think of death only in a feeble abstract way, like a very young child.

The inability to discriminate right from wrong is one shared by halfwits and philosophers. In order to avoid a polemical misunderstanding, we may choose the terms lawful and un-

lawful conduct or harmless and harmful acts. In this field the feeble-minded show a marked, amusing and sometimes disquieting skepticism and egoism. To most of them one deed is about equal to another and any discrimination in the nature and quality of acts must be dictated by considerations of immediate personal advantage.

"What works me weal that call I good,
What harms and hurts I hold as ill."¹

This naïve position contains more of ultimate soundness than of worldliness, and one might even build upon it a tinsel tower of Pyrrhonic questionings and vagaries or summon Menippus to the collapse.

Lack of inhibition is, of course, another marked characteristic of the feeble-minded, though here again the cynic might want to include too many classes of the rest of mankind. The point is not that man in general is notably inhibitive but that the lower orders are even less able to resist impulses, their power of withdrawal being subnormal. This peculiarity is often exaggerated by a pathological emotionalism by no means limited to the feeble-minded. Many of these sufferers, it must be understood, are both deficient and defective mentally. They are lacking in essential parts of the brain but they are also chemically unbalanced, so that their emotions sweep them off their feet at slight provocation. Such types are, of course, always dangerous, always prone to deeds of violence for which sufficient motive can only be found by the specialist. This question of emotional instability is one which will have to be dealt with in future chapters, since it affects not only the feeble-minded criminals but the far larger class of offenders in whom there is no lack of mind but only a defect of function, particularly of emotional control.

Feeble-mindedness is, as all will instantly recognize, often complicated with sexual abnormality, degeneracy, perversion

¹ The Kasidah.

and the like. The celebrated case of the multi-murderer Haarman, convicted at Hanover in 1925 for the commission of twenty-seven most revolting assassinations, is only one of the most recent examples of this complexity. Haarman, according to the testimony, lured various chance acquaintances, usually destitute young men, into his lair for the satisfaction of an exaggerated Sadism and there killed his victims with his teeth, making only a perfunctory effort to do away with the remains. The physicians who examined him reported him as being distinctly subnormal, utterly lacking in the sentiment of pity and sexually deranged in the severest way—an *unter-mensch* or subman.

However, the characteristic of the feeble-minded that is most often met with by the police, the magistrates and the medical examiners is that of easy suggestibility. Indeed, it is on this peculiarity of the lower orders of men, women and children—especially those less seriously affected usually grouped as morons—that a large section of the modern underworld structure has been erected. The modern city gang, grouped around a leader of another type, will always be found to contain at least some feeble-minded members, who usually carry out the lowest and most dangerous tasks assigned to the evil brotherhoods. Slightly feeble-minded children are constantly recruited from the streets and even from the schools by dope-peddlers and other purveyors of fresh material to the underworld and in time turned over to modern Fagins, male and female, who prepare these dull unfortunates for their part in the tragedy of life.

One of the most remarkable manifestations of the moron character is best observed in these individuals—namely, their slavish, doglike loyalty to their leaders and despoilers, who do not hesitate to betray and sacrifice them at every turn. About this loyalty in the underworld, this honor among thieves, a thousand airy romances have been spun, yet it is no more than a characteristic of lack-wittedness, the natural psychological

A MORON EXAMPLE

attitude of those who must follow and rely on a leader and will inevitably choose some one not too far above them, not too alien to their doltish submissiveness.

Every prison, police blotter and court record contains the sad recordance of the stories of such unfortunates. A typical case was recently investigated and examined at Post-Graduate.

A Bronx real estate man, old enough for better discretion, had been passing an evening with women in the back room of a forbidden saloon. About midnight he went to a railroad station to take a train and was apparently followed by a gang of four young men. At the entrance to the station he was held up in a most timorous and amateurish way. He was either in liquor or not impressed with the bandits. At any rate, he resisted and was shot. The bandits escaped but one and then the others were soon picked out and arrested. Among them was a young man named Boltwood.

An attorney appointed to defend this man suspected that his client was subnormal and irresponsible. Hoping to make such a plea in defense of the youth he asked that an inquiry be made. The tests showed that Boltwood was a medium-grade moron and an examination of his history and survey of his family soon revealed that there was at least one other feeble-minded child, a brother. The prisoner had been running away from home since his eighth year. He was unable to progress beyond the fourth or fifth grade in his grammar school. To-day he would undoubtedly have been placed in the ungraded classes.

As this deficient boy grew up he tried various occupations, but was naturally unable to hold any position that required the least mental application or capacity. He often drove trucks and teams, was a hostler and stableman and sometimes did heavy work in shipping and loading rooms. He was, however, also unstable emotionally and was unable to stay long at anything. Between jobs he loafed about the street corners and soon met the kind of companions natural to him and his

mental condition. One of these somewhat older striplings was the leader of the gang—a tough, hard, defective but not deficient young thug, who quickly won the respect and then the unswerving devotion of the dull-minded Boltwood by his physical prowess and his daring qualities that have in all times and places commanded the adoration of the lowly and stupid who live in a world bordering on the domain of the morons. The popularity of gladiators and wrestlers in older days and of prize-fighters and athletic champions to-day is, of course, the most obvious social manifestation of this underlying mental condition.

The other two young rascals were somewhat more intelligent than Boltwood and quite as defective emotionally as their leader. They did as he commanded. They executed the commissions requiring a little more cunning and discretion. Boltwood drove their car and did the low, unthinking work of the gang.

On the night the real estate gentleman was assassinated, the feeble-minded Boltwood again drove the car. He was near-by when the fatal shot was fired, but he had no personal part in the killing. He did, however, take his colleagues to and from the scene of the crime and he was thus an accessory before and after the fact. On this account he stood in the shadow of the electric chair.

In spite of the fact that this prisoner was feeble-minded by every test, that his deficiency was shown by his whole history and emphasized by the presence of other deficiencies in members of his family, Boltwood's attorney distrusted his chances of getting a merciful consideration on these circumstances and chose a technical opening to gain permission for a plea of second degree murder. This having been accepted, the unhappy halfwit was sentenced to serve from twenty years to the remainder of his days in prison, where he will probably be more at home than in the world.

When the laws which still govern such cases were written

there was, as yet, little suspicion among men that nature and the gods might be partial and discriminatory. Equality had been the chief shibboleth of modern democratic movements, just as closely allied sentiments had shaken the old masters of heaven from their thrones fifteen centuries before. On the belief in the likeness of human beings have been erected religions, states and civilizations. It was inevitable that laws should be framed in consonance with these ideas and it is incredible that they will be changed with any expedition, in the face of the rancorous clamor that arises whenever these discarded assumptions of the romantic age of modern polity are disputed.

To the average intelligent layman to-day the feeble-minded are a small class of unfortunates akin to the insane, whose existence means nothing beyond the fact that we must pay more taxes and maintain an extra hospital or two. And this is apparently the view of politicians, publishers and other molders of public opinion to whom a fact is something which happens to be convenient, something which ought to be true.

But the situation is much graver than even the technician—who has been acclimated to unpleasant facts—likes to believe. The numbers of persons of low intelligence in this country are enormous and increasing. The actually feeble-minded, who are a constant burden to society because of their helplessness or a menace because of the criminal tendencies just explained, exist in numbers quite up to the terrifying estimates of the army examiners quoted in an earlier chapter.

Nothing ought to be more clear to the masters of the republic than the necessity of meeting this situation from all angles. The criminal law must be changed to take into account the mentality and background of this vast enrollment of unfortunates, whom disease, accident and fate have brought—foredoomed to disaster—into an unequal world. Perhaps this is the first move to be made, in order that the public may become accustomed to the idea of specialized legal treatment

for offenders who must in the future be judged less by their acts than by their mental and nervous states. Progress in this direction is imperative if the culture is to survive.

The next necessary step must inevitably be the provision for the medical study and treatment of the whole feeble-minded population, to the end that thousands whose cases are already within the grasp of modern medicine may be handled and relieved and that new methods and modes of treatment may be discovered to "cure" or relieve many thousands of others. The sufferers must, of course, be taken in hand in infancy, which fact means that a deal of public education will be needed.

Combined with this work must be the preventive program. We shall have to find out within the next few decades not only how to treat feeble-minded children after they have unfortunately been born, but we must soon know how to prevent their birth, either by sterilization in obvious cases or by the medical and social treatment of our women, to prevent the nervous and glandular upheavals which ruin them for the purposes of procreation. To accomplish this end may involve a complete reorganization of modern society, but the choice apparently lies between radical change and utter destruction.

In other words, the feeble-minded must be recognized, treated and prevented if Occidental civilization is to survive.

BOOK III

THE INTELLIGENT CRIMINAL

CHAPTER I

ACTION VERSUS REACTION

" . . . Mind can be understood only by observing how mind was evolved."—
HERBERT SPENCER, "Principles of Psychology."

HERETOFORE our attention has been directed to human beings whose faults of behavior are due to mental deficiency. With these unfortunates the attempt has been made to find and display to the reader the most obvious and easily understood evidences of the chemical causation of criminality and abnormality. Now, however, we must consider a much more involved problem, one that has brought frustration and confusion upon the philosopher in all times—namely, the mystery of the criminal or aberrant man who is not deficient, who displays no stigmata or external indicia of derangement, who is often of superior intelligence, craft, cunning and talent. It was this type which brought the Lombrosian or anthropological school of criminology to earth in a snarl of bewilderment and contradiction.

Yet the higher type of offender, to whom the term of intellectual criminal has long and loosely been applied, is readily explicable in the terms of the modern physicist, physiologist and endocrinologist. He, too, is a victim of a deranged bodily chemistry. The only difference between him and the poor deficient is that he suffers from a functional rather than a formative disorder. Reverting to the cell processes and the principles of life which underlie all that is human and all that is nature, we see in this kind of man one in whom the cells of the brain have formed properly and in sufficient number and order, but we see also an individual in whom some groups of these cells do not perform their labor normally—most often

because of a diseased condition of the chemical laboratories of the body, the glands.

Perhaps the best way of making this complex study simple and understandable will be to proceed with an outline of the development of the brain and the mind from the rudest beginnings to the highest culminations. It is only by this means, as Spencer suggests, that the highly complicated and involved becomes clarified through an understanding of the fundamental simplicity.

We come at once upon a basic conflict of ideas and conceptions which centers about the question of what life is. Is it, as the theologian holds, a divinely measured and appointed gift, to be accounted for according to merit and demerit? Is it, as the older philosophers held, a matter of action, of individual freedom and responsibility? Or is life reaction?

The present contention will be that of all modern science—that life except as a reaction to environment is both impossible and inconceivable, that individuals do not exist and cannot exist or act independently of the vast forces of which they are minute parts, that all creatures, whether protozoa or men, are governed by a single and universal law, that man is the slave of the earth, not its master. This is, to be sure, the complete monist and determinist position. It includes the definite assertion that there are no human actions as such, that all we can do is to react to various compellants within and without.

The attitude of the older men of science, especially the romantic naturalists, was to impute even to the lowest animals a course of purposive or teleologic conduct. This is what is sometimes called the anthropomorphic interpretation of animal behavior, since it is based on an ascription to inferior creatures of the apparent motives and responses of men. According to these plausible old fellows the bee went honey gathering because it was attracted by the sweet scent and color of flowers, the infusorians sought the sunlight or the shade because they

loved either brightness or darkness, certain larvæ crept upward toward their food out of some mysterious and marvelous instinct, comparable to the intuitions of man.

Happily, all these bright fables have been exploded. Instead of these intelligent processes in creatures some of which possess not the first rudiments of a brain, we now postulate a series of involuntary responses to natural external stimuli, a series of reactions to forces in the environment—forced movements, as Jacques Loeb called them. The bee goes honey gathering because of chemical compulsion. The infusorian goes to or from the sunlight because it is forced to do so by the attractive or repellent effect of light rays on its body—positive or negative heliotropism. And the larva creeps upward because the powerful rays of the sun draw it in that direction. The moth does not fly toward the candle flame because it loves that which will so soon destroy it, but because light draws it with a blind and irresistible power.

Accordingly, modern physicists and psychologists conceive various grades of reaction on the part of creatures in various stages of phylogenetic development. The lowest form is taxis, which is the influence of external agents and energies on unicellular creatures—vegetable or animal. Next comes tropism, which is the same principle applied to pluricellular bodies. The word tropism was first used in 1832 by de Candolle, in the form of heliotropism, to describe the bending of a branch toward the sun. Le Dantec explains that a great number of cell tactisms taken together may result in the obvious direction of the growth of a branch or the movement of an animal—in other words a tropism.

After these most primitive responses to outside energies or stimulations follow, in the order of ascent and according to the usual terminology, reflexes, instincts, intelligent action and that dubious jactitation of man, rational behavior or, as our spiritual friends would have it, volition.

The primitive tactisms and tropisms are of various kinds, of

which some of the more important are geotaxis and tropism, response to the gravitational pull of the earth; phototaxis and heliotropism, response to the influence of light and the sun; chemotaxis and tropism, reaction to chemicals in the environmental medium; rheotaxis and tropism, response to currents of air or water; thermataxis and tropism, response to heat and cold; electrotaxis and galvanotropism, response to electric currents, magnetic forces and the like; thigmotaxis and stereotropism, the response to contact with solid bodies, and many more. These tactisms and tropisms may be either positive or negative. The little animal may be drawn or repelled by the light of the sun, the chemicals in the sea water, the galvanic current. But, whatever the force that rules it and whether the response be negative or positive, the animal has no choice and no discretion. It is the slave of the force and matter which make the world.

Loeb and many others have demonstrated this fact by means of the most ingenious and exhaustive experiments. A classical example may be cited from this author, namely that conducted with *Porthesia chrysorrhœa*:

"This butterfly lays its eggs upon a shrub, on which the larvæ hatch in the fall and on which they hibernate, as a rule, not far from the ground. As soon as the temperature reaches a certain height, they leave the nest; under natural conditions this happens in the spring when the first leaves have begun to form on the shrub. (The larvæ can, however, be induced to leave the nest at any time in the winter, provided the temperature is raised sufficiently.) After leaving the nest they crawl directly upward on the shrub, where they find the leaves on which they feed. If the caterpillars should move downwards on the shrub they would starve, but this they never do, always crawling upward to where they find their food. What gives the caterpillar this never-failing certainty which saves its life and for which the human being might envy the little larva? Is it a dim recollection of experiences of former generations,

as Samuel Butler would have us believe? It can be shown that this instinct is merely positive heliotropism and that the light reflected from the sky guides the animals upward. The caterpillars upon waking from their winter sleep are violently positively heliotropic, and it is this heliotropism which makes the animals move upward. At the top of the branch they come in contact with a growing bud, and chemical and tactile influences set the mandibles of the young caterpillar into activity. If we put these caterpillars into closed test tubes, which lie with their longitudinal axes at right angles to the window, they will all migrate to the window end, where they will stay and starve, even if we put their favorite leaves into the test tube close behind them. These larvæ are in this condition slaves of the light.”¹

Loeb cites Professor Whitman as authority for the statement that male pigeons, when confined alone, will go through the motions of mating with any solid object and even with the optical illusions of solid bodies, such as their own shadows—thus affording an example of stereotropism in segments of the reproductive organs.

“In ants,” says Loeb, “the winged males and females become intensely positively heliotropic at the time of mating. Copulation occurs in the air, in the so-called nuptial flight. At a certain time—in the writer’s observation toward sunset, when the sky is illuminated at the horizon only—the whole swarm of males and females leave the nest and fly in the direction of the glow. The wedding flight is a heliotropic phenomenon presumably due to substances produced in the body during this period.”

Vernon L. Kellogg² recites the following:

“In the course of some experiments on the sense-reactions of honey-bees, I have kept a small community of Italian bees in a glass-sided, high observation hive, so made that any par-

¹ Loeb, “Forced Movements, Tropisms and Animal Conduct.”

² V. L. Kellogg, “Some Insect Reflexes,” *Science*, 1903.

ticular bee, marked, which it is desired to observe constantly, can not escape this observation. The hive contains but two frames, one above the other, and is made wholly of glass except for the wooden frame. It is kept covered, except during observations, by a black cloth jacket. The bees live contentedly and normally in this small hive, needing only occasional feeding at times when so many cells are given up for brood that there are not enough left for sufficient stored food supplies. Last spring, at the normal swarming time, while standing near the jacketed hive, I heard the excited hum of a beginning swarm and observed the first issuers rushing pell-mell from the entrance. Interested to see the behavior of the community in the hive during such an ecstatic condition as that of swarming, I lifted the cloth jacket, when the excited mass of bees, which was pushing frantically down to the small exit in the lower corner of the hive, turned with one accord about face and rushed directly upward away from the opening toward and to the top of the hive. Here the bees jammed, struggling violently. I slipped the jacket partly on; the ones covered turned down; the ones below stood undecided; I dropped the jacket completely; the mass began issuing from the exit again; I pulled off the jacket and again the whole community of excited bees flowed—that is the word for it, so perfectly aligned and so evenly moving were all the individuals of the bee current—up to the closed top of the hive. Leaving the jacket off permanently, I prevented the issuing of the swarm until the ecstasy was past and the usually quietly busy life of the hive was resumed. About three hours later there was a similar performance and failure to issue from the quickly unjacketed hive. On the next day another attempt to swarm was made, and after nearly an hour of struggling and moving up and down, depending on my manipulation of the black jacket, most of the bees got out of the opening and the swarming came off on a weed bunch near the laboratory.

“That the issuance from the hive at swarming time depends on a sudden extra-development of positive heliotropism seems obvious. The ecstasy comes and the bees crowd for the one spot of light in the normal hive, namely, the entrance opening. But when the covering jacket is lifted and the light comes strongly from above—my hive was under a skylight—they rush toward that top, that is, toward the light. Jacket on and light shut off from above, down they rush; jacket off and light stronger from above than below and they respond like iron filings in front of an electromagnet, which has its current suddenly turned on.”

Thus the tyrannous power of the forces of nature even upon creatures of relatively high development—having the remarkable social organizations of ants and bees—is clearly demonstrated.

We must, however, begin again if we wish to trace the gradual development of the brain. In unicellular protozoöns, like the amœba, the whole little animal is exposed to its medium and all stimuli reach it by direct action on the periphery. But, as life evolves to higher stages and larger creatures through cell congregation, we soon reach the point where only a relatively small number of the constituent cells—those on the surface of the creature—are in direct touch with the medium—the seawater, sun or air. At first, as suggested by Le Dantec, a series of tactisms in the various cells controls the movements of the little pluricellular animal, but the stage is soon reached in which various small groups of cells become specialized. They take up particular functions. Some of them attend to the swimming or locomotive functions of the little animal; others constitute a primitive mouth and do the feeding; while still others attend to digestion, elimination and what not. As soon as this stage of ascent is reached on the phylogenetic tree it becomes necessary to the life of the animal to have some means of communication between the various cell groups or,

as we might say, the several parts of the body. Locomotion and feeding must be coördinated. Many cells lie in the interior of the body and can only respond to the tug of external forces and stimulations if there is a means of communication with the peripheral cells, which receive the impulsions or stimulations directly. Here we have the origins of the nervous system.

This great intercommunicative organization—the very center of life and being, as it is in man—was originally a very crude and elementary thing that evolved slowly through millions of years into what we commonly term our brains and nerves. In all the lower creatures the nervous equipment remains imperfect and in some sense rudimentary. If we go as far down on the tree of evolutionary ascent as to reach the actinians or sea anemones, those strange, flower-like sessile animals that live in the shallows of our oceans, we find a nervous system that is not, in any real sense, intercommunicative. Fluere and Walton tried the experiment of giving pieces of filter paper to an anemone, repeatedly placing the scrap on the same tentacles. The animal grabbed greedily for what seemed like food and passed it to its mouth, only to eject it after a time. But when a fresh scrap of paper was given the same tentacles they again took it hungrily and the mouth again swallowed it, with the same result as before. It was only after many repetitions of this experiment that the tentacles finally refused to catch at the bait. The experimenters next tried the same scraps of paper on some of the other tentacles of the animal and these took it as avidly as had the first, the mouth again swallowing the indigestible stuff. The memory is thus of a very low order and so is the mechanism for communication between the parts. A man's left hand would not take that which his right had just found to be worthless or harmful. The sea anemone is capable of nothing more complicated than a simple reflex, which is the next highest grade of reaction after the tropisms.

Holmes³ records interesting facts concerning insects, as follows:

"Among the insects, as in crustacea, the seat of many instincts is in the ventral ganglia rather than in the brain. A decapitated fly is able to walk and fly and go through with elaborate movements of cleaning the wings, legs and body. In experiments made by the writer on the water scorpion, *Ranatra*, it was found that after decapitation the insects were able to walk and swim almost as well as before. In fact, they became much more restless and would walk about for hours without coming to rest; and when they finally became quiet they could be aroused by the slightest stimuli. When placed on their backs they would readily right themselves. If the tip of the breathing tube was seized while the insect was swimming its efforts to swim away would be performed with much greater vigor. If it does not effect its escape by this method it has recourse to a remarkably neat and apparently intelligent device. The hind legs are thrown back as far as possible, whereby they are enabled to grasp the breathing tube a short distance behind the body; then by exerting a pull they bend the body ventrally. This soon places the second pair of legs so that the offending object can be reached, when all four legs are employed to push the body away, which is very frequently accomplished. The behavior of the decapitated *Ranatra* in this situation certainly affords an excellent simulation, not only of purposive action, but also of considerable ingenuity in its accomplishment."

The point is, however, that the *Ranatra* that does this is without a brain and is merely proceeding by means of a series of reflexes, governed by the nerve ganglia.

Experiments made with crayfish show similar results. The brains of these crustaceans being removed, many of their actions are still carried on by the various ganglia of the ventral nerve cord. The usual way of proceeding with such experi-

³ S. J. Holmes, "The Evolution of Animal Intelligence."

ments is to cut the commissures connecting the brain with the main nerve cord and then trying to get the usual reflexes. The eyes respond in the usual way. If the antennæ are touched they are moved or withdrawn. The crayfish with the commissures cut can walk and swim as well as ever, it is able to seize and swallow its food, it can distinguish between food and indigestible matter, but it moves much more feverishly and restlessly than before. Apparently the brain contains inhibitory centers. If the commissures are cut further back or if the nerve cord is severed at some point lower on the body, different effects are produced. It is found that the various ganglia control, broadly speaking, the segments of the animal in which they lie.

Thus we see that the reflexes in animals of these lower orders—insects, crustacea and the like—are controlled not by the brain but by various nerve centers, that serve the same purpose and control the same acts which, in the human being, are assigned to parts of the brain.

Many of these reflexes in lower animals are called, by the older metaphysical naturalists, instinctive actions, and many an engrossing tome has been written about the marvels of this instinct. No more familiar example of instinctive prodigies might be cited than that of the spider crab, which has been observed to cut off bits of seaweed and apparently plant them among the hairs or thorns of its back-shell, where the weeds often grow and finally cover the ferocious crab with a bower that is its hiding place—its camouflage. How many ohs and ahs have been uttered over this conclusive evidence of high intelligence in this voracious crustacean. It remained for Minkiewicz to show that spider crabs whose brains were disconnected by the cutting of the esophageal commissures, that lead to the large ventral ganglion, still performed this act of snipping seaweed and placing the bits on the back, the actions being controlled by the nerve ganglia. Perhaps this only goes to show that the nerve ganglion is as capable of so-called

instinctive action as the brain segment. If so, the point remains that such acts are reflexes, in the proper meaning of that term. The nerve ganglion is apparently capable of complex and even conditional reflexes, the latter implying associative memory of a crude kind.

In all these lower orders of creatures we have been observing the working of the most primitive of the three (sometimes classed as two) nervous systems extant in man, namely, the sympathetic. In these creatures, as shown by the experiments cited, practically all the life of the animal is controlled by this system. The brain is still a more or less rudimentary organ, which can be cut off without fatality and without even seriously hindering the actions of the animal.

Phylogenetic progress seems, however, to have lain in the constant direction of a centralization of nervous control, in a gradual movement of the centers toward the cephalic end of various creatures, culminating in the head of man and its brain content. Perhaps the next important stage in this progression is to be observed in that primitive little vertebrate, the amphioxus. Here is a little, slender sea creature with neither brain nor heart but with a spinal column and the first evidences of a central nervous system in the spinal cord. In these creatures the nerve control lies entirely in the segments of the spinal column. If the amphioxus is cut into its various parts or metameres, these segments continue for some time to live and move. The same phenomenon is witnessed, to a lesser degree, in some snakes.

From these primitive vertebrates, in whom the first central nervous system is found, the progress upward becomes clearly defined. We pass rapidly through the various grades of fishes—the cyclostomi, the selachians, the ganoids and the teleosts, noting as we go some of the strange experiments of nature in the higher evolution of nervous control. In the sharks, for instance, the most highly developed center is that of smell and it is by this sense that the selachian pursues and finds its

food. The experiment which demonstrates this fact is one of the classics. Sharks have on many occasions been placed in aquarium tanks with their optical nerves cut, rendering them completely blind, as was first demonstrated by various tests of the eyes. These blind sharks, when set free in the tanks, attacked their prey with great avidity and showed not the least difficulty in catching the live and violently active fish on which they naturally feed. In other words, blindness seemed to incapacitate them not at all. Similar sharks were then taken and their olfactory nerves cut, depriving them of the sense of smell. Such sharks starved to death, though surrounded by food fishes which they could see but not capture.

The higher fishes, ganoids and teleosts, on the other hand, have the organs of smell only slightly developed and live and hunt entirely by means of sight.

In these higher fishes there becomes evident a notable development of the cerebral cortex, that delicate covering of the brain which, in the human being, contains the centers of all the higher functions—the seat of the human spirit, if we may use the term without suspicion of metaphysic. Accordingly, it is in these fishes that we find associative memory first attaining something like a prominent part in the life activities of the creature. In the words of the physicist-naturalist, we find conditional reflexes finely developed. Experiments with a tank of perch will illustrate clearly enough what is meant.

Triplett used a male and female perch which had been fed on worms, putting them into one part of the tank and some minnows into the other, a clear glass partition dividing. The perch lunged viciously at the smaller fish, thumping their snouts against the glass again and again, the female being particularly active and persistent. This experiment was repeated three times each week for a month, each test being of about thirty minutes' duration. At the end of a month, but not

before, the perch would no longer pay any attention to the minnows.

Now the perch and minnows were placed into their respective parts of the aquarium and kept there for a week. Again the perch paid little or no attention to the minnows, but when worms were placed on the other side of the glass the perch began striking furiously and butting their heads against the glass till they were exhausted.

Later, a minnow was introduced into the compartment with the perch. They paid only passing attention to it as long as it did not dart and flash by them. Once it had to be rescued. Later the perch paid considerable attention to their natural prey but restrained themselves from striking, as though inhibited by some memory of the bumps against the glass.

Such experiments with fish have been often disputed and it must be said that the results obtained are far from uniform. Accepting Triplett's experiments as valid, however, nothing is more evident than that even in these high-grade fishes the conditional reflexes are far from perfect. Associative memory is still in its experimental stages.

The development of the cortex in fishes marks, of course, one of the most important early steps in the gradual concentration of nerve centers in the cranium—the progress from a spinal to a cerebro-spinal system. In birds the progress has been considerable. They are in every sense cerebral creatures. Their associative memories function with sometimes extraordinary vigor and distinctness, as when they remember last year's nest and flit to cover from any shadow that might possibly be a hawk. The bird, too, dies if the brain is removed or the cord cut. This is, of course, also true of higher fishes. On the other hand, the frog, a vertebrate creature lying between the fish and the bird on the phylum, may have its brain removed and still function in many ways. Indeed the reactions of a decerebrized frog form, as Holmes points

out, following Huxley,⁴ is a stock illustration of plain reflex actions.

"The withdrawal of a foot when pinched is one of the simplest of these. When a drop of acid is placed on the side of the body the hind foot of that side is brought forward to wipe it off. With a somewhat stronger stimulus the foreleg of the same may be moved back to the irritated spot. . . . If a frog with the greater part of its brain removed is taken into the hands it uses both hind legs to push against the hands, and at the same time inflates the lungs with air, causing the body to swell so that it more readily slips from the grasp . . .", etc.

When we come to the mammals we find again that the lower orders exhibit none of that complete concentration in the brain which exists in man and the higher apes. Munk, for instance, has removed the motor centers from the brains of cats and dogs without causing complete paralysis, such as would inevitably result in primates and men. The reason for this is that in canines and felines the center has not yet been completely translated upward to the cortex from the more primitive basilar ganglia. Yet all mammals have the cortex clearly and even marvelously developed. Their associative memory is excellent. Their reflexes are more complex than those of any lower creatures and they react almost entirely through very accurate conditional reflexes—that is to say, reflexes governed by associative memory.

We have seen the nervous system proceed from nothing but a peripheral sensitiveness in the case of the protozoön through the rude beginnings of a communicative system in such creatures as the sea anemone, the rudimentary sympathetic system in insects and crustaceans, the beginnings of the spinal or central system in the amphioxus, the gradual upward trend of the centers in fishes, reptiles and amphibians, the first real cerebral concentration in the birds and the upward transfer of ever higher functions in the mammals.

⁴ T. H. Huxley's "Animal Automatism," Collected Essays, Fourth Series.

Correlatively, we have seen the responses of this ascending line of creatures progress from simple taxis through tropisms, simple reflexes, compound reflexes and conditional reflexes, dependent on memory.

It is time now to drop from use the dubious term *instinct*. It is also advisable to examine those actions of living organisms, even including man himself, which have so long been termed intelligent actions. By this term is meant all that vast class of activities which clearly show a profiting by experience or observation. In this sense the final refusal of the perch to strike at minnows behind a glass wall may be termed an intelligent action. In a more limited sense, the term may be applied only to such conduct as exhibits the full power of inference—of connecting one experience or observation with another, of reckoning from cause to effect. If we use the term within these strict limitations, we reserve it for application only to apes and men, for no other creatures have ever shown the unmistakable power of inference under experimental conditions, whatever the wondermongering tales and fabrications of the imaginative naturalists and the pleasant fictions of folk learning.

There has been and still exists a general tendency, even among the intelligentsia and among pseudo-scientists, to draw a kind of mental asbestos curtain at this point, to set up a sharp dividing wall between the mentality of man and all creatures below him. In spite of the fact that the ascent of nervous activity, graduating into mental activity, has been so clearly traced and the slow development of the nervous organs so clearly shown physiologically—from the amœba to the great ape—most men want to stop here abruptly and place a quite different construction upon the nervous activity of man—upon his free mentality, so called. The name rational conduct is given to man's behavior.

To the investigator of phenomena no such division is pos-

sible. What seems to most of us the result of independent thinking and willing is found to be no more than a reaction to the forces of the world. The protozoön reacts directly and simply. The human being reacts indirectly and with enormous complexity, but he reacts none the less and all his vaunt of freedom is only a pleasant fable. We may state the matter more definitely:

All organisms, whether simple or complex, respond to external stimuli which are more or less constant in nature. The primitive cell, having only a rudimentary mechanism, responds directly. The protozoön in the ditch, when it comes into peripheral contact with sunlight, puts out or, better, is forced to put out its pseudopods and slink away into the shade. (*Heliotaxis negative*.) That is the external phenomenon. Internally, something more precisely describable has taken place. The sunlight has caused an electro-chemical reaction in the protoplasm of the tiny animal, changing its stored potential energy into kinetic energy, the force with which the cell performs its locomotive actions.

The same thing happens to the human being, but in a more complicated manner. In our bodies most of the cells are not on the periphery at all, only the skin and the end organs being so exposed. To compensate for this condition, we are equipped with a most delicate and vastly ramified system of communication, the nervous organization. The same stimulus which acts directly on the little free-swimming cell must pass through our complicated mechanism and bring its responses indirectly. For instance:

If a man steps out into overstrong sunlight his sight-end organ, the eye, receives an unpleasant if not painful stimulation. This impression explodes potential energy in the nerve cells of the retina, sending a flow of kinetic energy along the optic nerves, through the optic tracts and thalamus into the occipital lobe of the cerebrum—an electro-chemical impulse, just as with

the amoeba. From the visual center in the occipital lobe, a further impulse passes to the association and concept centers of the brain. These, in turn, send out an impulse to the motivating center, which sends its message through the spinal cord to the muscles. The muscles contract and the man moves into the shade, shielding his dazzled eyes. All this happens, to be sure, in the fraction of a second. The speed of nerve impulses has been repeatedly measured and found to be about 426 feet per second. In frogs, to show how nature has improved the nervous mechanism in the course of evolution, the speed of the nerve impulse, as determined by von Helmholtz, is only about eighty-six feet per second.

The noteworthy point is that whatever the form of the original stimulus and whatever the creature, the interior activity is of the same nature. Whether a protozoön responds to light (heliotaxis or phototaxis), to heat or cold (thermataxis), to pain (traumataxis), or to any other stimulation, the result is invariably an electro-chemical change in the protoplasm. Just so in man, whether he responds to light or darkness, heat or cold, pain or pleasure, or any other sensory impression, the same invariable process follows. The external impression causes an explosion of the potential energy stored in the bodily cells—an electro-chemical reaction and nothing else. The resulting impulse or wave of kinetic energy travels along the nerve fibers to the various centers, causing him to act in various ways, externally and internally, according to the needs of the situation.

Most intelligent men are willing to follow the physicist this far in his dissection of human activities, but when it comes to treading the dark inner mazes of much more complicated processes, such as thinking, weighing, deciding, inhibiting and willing, to use the usual terms, many of us bog down and decline to go further. The waters grow too dark and deep, the maze too intricate. It is this very complexity which led Dr. Johnson to declare in his dogmatic style that the will is

free and that that was the end of the matter. It is this perplexity which has led even such comparatively inseeing writers as Bernard Shaw to cleave to the doctrine of free will, a blunder which the better-equipped Anatole France avoided with his smiling skepticism.

The twin notions of man's mental freedom and a teleologic background to nature and its works are so charming, so obvious, so fundamental in all the past acceptances of the race that no man shakes them off without the bitterest struggle. There is something so infinitely engaging, so flattering and so satisfying in the whole grand conception of a life founded on will and purpose that this idea has permeated and sullied even the atmosphere of scientific investigation to a degree that astounds the physicist. Not only has the Lamarckian fable of inherited habit invaded the writings and explorations of such popular naturalists as Eimer and Fabre to the point where the late Theodore Roosevelt's curse of "nature faker" falls automatically upon their shoulders, but a neo-Lamarckian school has arisen which has tried to bolster the discredited doctrines of the author of the *Philosophie Zoologique* with still denser absurdities.

One of the prettiest and most popular yarns of Fabre, for instance, has to do with the solitary wasps and the alleged marvel of that instinct which supposedly leads them to sting the caterpillars designed for food for the wasp larvæ in the ventral ganglia, so that they will be alive yet paralyzed. The object of all this, says Fabre, is to provide the larvæ with live food, that will not putrefy in the nest and so destroy the young wasps. What a marvelous provision of nature is this, he chants; what a prodigy of instinct; what a final proof of the inheritance of long-developed habit; what an evidence of surgical knowledge among the insects!

Unhappily for romance, G. W. and E. G. Peckham undertook the investigation of the conduct of these marvelous creatures and found the whole body of claims a mass of in-

accuracy and fabulizing. As regards the stinging of the caterpillars, the Peckhams report:

"In the three captures that came under our observation, all the caterpillars being of the same species and almost exactly of the same size, three different methods were employed. In the first, seven stings were given in the extremities, the middle segments being left untouched, and no malaxation (bruising) was practiced. In the second, seven stings again, but given in the anterior and middle segments, followed by slight malaxation. In the third, only one sting was given, but the malaxation was prolonged and severe."

On examining the nests of the solitary wasp *Ammophila urnaria*, the Peckhams found that both the manner and the severity of the stinging varied greatly. Examining fifteen caterpillars found in such a nest, the investigators report that some lived only three days, some a few days longer and some two weeks. Again they report that "out of forty-five species of our solitary wasps about one-third kill their prey outright. Of those that remain there is not a single species in which the sting is given with invariable accuracy. To judge from results, they scarcely sting twice alike, since the victims of the wasp may be killed at once or may live from one day to six weeks, or may ultimately recover. Even the caterpillars of *Ammophila*, the most distinguished surgeon, live anywhere from two to forty days."

All that could be concluded from these accurately conducted and observed researches was that the solitary wasps sting caterpillars and put them away as food for their larvæ. There was neither accuracy nor direct similarity in their methods. Say the Peckhams: "The one preëminent, unmistakable and ever present fact is variability. Variability in every particular—in the shape of the nest and manner of digging it, in the condition of the nest (whether closed or open) when left temporarily, in the method of stinging the prey, in the degree of malaxation, in the manner of carrying the victim, in the

way of closing the nest, and last, and most important of all, in the condition produced in the victim by stinging.”⁵

And wherever these tales of the unsuspected marvels of animal instinct are carefully investigated similar blasting results are obtained. For all that, there are marvels in the conduct of lower orders of creatures which brought about this attitude of wonder-catering, tall yarn spinning and inventing of metaphysical and even supernatural explanations. There is a mysterious hidden or inner force at work that has made men wonder and fabulize.

We must ask why the bees swarm at a certain season—the right one—and at no other time. Why does the water beetle burrow into the soft bank at the time of pupation? Does it understand the nature of its act and foresee events? Why do birds begin to migrate in the fall, nearly always at a certain date, regardless of the fact that the days are still sunny and warm? Among hibernating animals it is easy enough to understand that the first nips of the cold may send them away to their burrows, but what is it that keeps them half alive through the cold months and then wakens them in the spring, long before the first juice or warmth of the nubile season can have penetrated to their lairs?

Our good and plausible friends would have us believe that all those things are due either to divine control or to some strange and incalculable intelligence on the part of the brutes, a fine instinct that man has lost, along with certain arts, more or less fictive. The simple truth, however, is that the environment, at these definite stages in the life of the animal, causes chemical changes within, that of themselves force certain lines of conduct upon the bee, beetle, bird, bear or man. The creature, brute or human can no more resist these tremendous compellants than the earth can resist the pull of the sun or the sun itself step out of the infinite sidereal stream. We have already seen, in earlier chapters, what these chemical changes

⁵ Quoted by S. J. Holmes, “Evolution of Animal Intelligence.”

are in man and how the glands bring them about. We shall have to consider this much more minutely presently. For the moment it is enough to understand that similar chemical changes take place in animals. For instance, Dr. Adolph Koelsch of Berlin has lately demonstrated that it is a shrinkage or diminution of activity in the thyroid glands of mammals that causes hibernation and an accession of activity that wakens the sleeping animal when spring comes up the latitudes. One need hardly cite the well-known fact that at the rutting season among the various species of deer, the male grows fresh antlers, becomes pugnacious and is totally altered from the shy and timid creature of other seasons—through an increase of the interstitial hormone.

On the effects of the hormones, we may again quote Loeb's "Forced Movements, Tropisms and Animal Conduct":

"We know through F. Lillie's observations that, in the blood of male cattle, embryo substances circulate which inhibit the development of secondary sexual characters of the female embryo, and we know through Steinach's experiments that the intermediate tissue from the sexual gland of one sex when introduced into the castrated organism of the opposite sex may impart to the latter the sexual instincts of the former. Hormones produced by definite tissues, therefore, influence the instincts. . . .

"Mating in certain fish, like *Fundulus*, consists in the male pressing that part of its body which contains the opening of the sperm duct against the corresponding part of the female body. The latter responds by pressing back and the pressure of the body is maintained by both sexes through motions of the tail. During this mutual pressure or friction both sexes shed their sexual cells, sperm and eggs, into the water, and since the opening of the cloaca of the male and female, through which the sex cells are shed, are brought almost in contact with each other, the sperm and eggs mix at the moment they are

shed. This act of mating is due to a stereotropism which exists only during the spawning season and is supposedly due to certain hormones existing at this time in the animal. The existence of such hormones is also indicated by certain colorations which develop and exist in the male during this period. The stereotropism is to some extent specific since it is exhibited by the contact between the two sexes. The specificity of this stereotropism is of importance and needs further experimental analysis, but that it is in reality a type of common stereotropism is evidenced by the fact that if during the spawning season we keep females isolated from males in an aquarium, the females will go through the motions of mating and shed the eggs every time they come in contact with the glass walls of the aquarium . . ." etc.

In other words, the hormones compel such acts, whether they have any purpose or not, and the creature is permitted no discretion.

Comparable instances might be multiplied out of the commonest experiences of mankind. Let us suppose a drizzly evening and a man sitting by his fireplace, hesitating between staying where it is warm and dry or going out to the corner, a few squares away, to get a newspaper and a cigar. The man yields first to one feeling, then to the other. Eventually he goes out into the cold and wet to get his cigar and his evening paper. He believes and the world has long believed that this man consulted his own pleasure, willed to go out and did as his will bade him. But the natural facts are otherwise.

This man is in the habit of smoking a cigar and reading the paper in the evening. Usually, unless he has provided these objects of pleasure in advance, he walks out and gets them from the corner shop. He has thus formed a habit. Most of us would dismiss the matter there by saying that his habit was too strong to be overcome by a rainy night and a sense of bodily comfort by the hearth. But we must know what habits are and how they produce their effects. When we look more

closely at the matter we find that the cigar has a certain soothing effect upon the man in question; that his newspaper satisfies a certain fixed curiosity. If the cigar and the newspaper are not present, certain of the nerves carry the message of an unusual situation to the brain. The brain sends out a message of discomfort to certain of the glands. These discharge a little too much of their hormone and the nervous system of the man is a little more irritated.

On an ordinary occasion, the man would go out at once and get his cigar and newspaper. But now he feels the contrary impulses aroused by the warmth of the fire and the comfort of his room. In his association centers a connection with the rainfall and the chill is formed and his concept centers or memory yield up the unpleasant picture of being wet and chilled. A struggle goes on between the two forces in the mechanism of the brain. If the picture of being wet and cold is more impressive than the desire for tobacco and the news, the man stays in. Otherwise he goes out. He flatters himself that he has reasoned out the whole matter and acted on judgment. He is deluding himself.

In more vexed and complicated situations the workings of the brain are, to be sure, much more intricate and at times obscure. It is to the problem of clarifying them that we shall have to address ourselves in the next chapter. Meantime we may rest on this comparatively simple instance and proceed to another conclusion of Loeb:

“The tropistic effects of memory images and the modification and inhibition of tropisms by memory images make the number of possible reactions so great that prediction becomes almost impossible and it is this impossibility chiefly which gives rise to the doctrine of free will. The theory of free will originated and is held not among physicists but among verbalists. We have shown that an organism goes where its legs carry it and that the direction of the motion is forced upon the organism. When the orienting force is obvious to us, the motion appears

as being willed or instinctive; the latter generally when all individuals act alike, machine fashion; the former when different individuals act differently. When a swarm of *Daphnia* is sensitized with CO_2 they all rush to the source of light. This is a machine-like action, and many will be willing to admit that it is a forced movement or an instinctive reaction. After the CO_2 has evaporated the animals become indifferent to light, and while formerly they had only one degree of freedom of motion they now can move in any direction. In this case the motion seems to be spontaneous and free, since we are not in a position to state why *Daphnia* 'A' moves to the right and *Daphnia* 'B' to the left, etc. As a matter of fact, the motion of each individual is again determined by something, but we do not know what it is. The persistent courtship of a human male for a definite individual female may appear as an example of persistent will, yet it is a complicated tropism in which sex hormones and memory images are the determining factors. Removal of the sex glands abolishes the courtship and replacing the sex glands of an individual by those of the opposite sex may lead to a complete reversal of the sex instincts. What appears as a persistent will action is, therefore, essentially a tropistic reaction."

It will be difficult for many men to accept the notion that their highest devotions, their most ecstatic amours, their lifelong fidelities, the very roots of their finest poesies, are no more than intricate chemical reactions, but it has been equally hard for men in other times to give up the conception of a geocentric universe or the power of incantations. Progress is disillusion.

Sir Jagadie Chander Bose, the Anglo-Indian botanist, even assures us that our reactions are no different from those of plants, for he has made the ordinary snapdragon respond to poisons and stimulants precisely as does the human body and he has recorded on the sensitized plates a spasmodic action comparable to human heartbeats which he visibly slowed down

with bromides. So that our relation to the lowest animals is extended to quite humble plants, whatever that may mean to the pride of man.

The tolerance of the reader is besought for what must seem a long digression from the question of abnormal conduct in intelligent human beings. The only excuse to be offered is that a realization of the forced character of human behavior is necessary to an understanding of normality and abnormality in man. Nothing is explicable so long as we adhere to the notion that men do as they will. On the other hand, all can be made clear enough as soon as we realize that the human mental and nervous mechanism is simply a development from the similar equipments to be found in all the animals in a descending scale as we make our way down the towering phylum of earthly life, when we are at last convinced that a man, like a cell, a bee or a brute, lives and reacts only in the irresistible grasp of nature.

In what follows we shall see the intimate workings of the mental mechanism and the manner in which faulty or abnormal reactions are produced.

CHAPTER II

THE MECHANICS OF BEHAVIOR

"Sedulo curavi, humanas actiones non ridere, non lugere, neque detestari, sed intelligere."—SPINOZA, *Tractatus politicus*.

Two men of comparable years and general situation suffer like frustrances in love. One man grieves a little, suffers more or less transiently and shortly proceeds in his usual way with the business of life. The other man is overwhelmed with woe and self-pity. He cannot shake off his anguish. He pines and droops. Time makes of him a gynophobe or a mawkish hermit. We witness these contrasts of conduct; we shrug and say that different men give different reactions. But what is the secret of this disparity?

Again, two men who show only slight external differentiation meet with reverses of fortune. One rallies and recovers; the other kills himself in despair. Or two men in a counting house are subjected to the same daily temptations. One of them—and not always the most admired and trusted—remains faithful to his employers. The other steals and rides the toboggan into jail. There is, to be sure, an inner and secret difference between such pairs of men. But what? Why?

Why do we find the world filled with human creatures who are in some sense aliens, the economic failures, the social and domestic failures, the ne'er-do-wells, the vagrants, wanderers, dromomaniacs, wild radicals of either the progressive or reactionary coloration, eccentrics, eremites and, in the ascending scale of their aberration, incorrigibles, self-accusers, pathological liars, impersonators, phobiacs, invert, homosexuals, criminals and monsters?

FUNCTIONAL DISTURBANCE AND GLANDS

The contention here will be that these abnormal beings, with such exceptions as will be noted, are the fruits of disordered emotions based upon defective human chemistry.

In earlier chapters mention has already been made of the true hereditary types, defective through some involvement of the parental germ plasm, of the types suffering from traumatic damage, of those disordered by infectious disease and of the victims of drugs and toxins. Again, the next preceding section of this work has treated at length those numerous individuals who suffer from a retardation of the formative processes in the cells of the central nervous system—the deficient. There remains the group whose disturbance is of the functional order. This term needs clarification.

The words “functional disturbance” are here used to indicate a derangement of the working or performance process in the cells of the nervous system and the ductless glands. The assumption is that the brain and other centers of the nervous system are normally formed or developed but that, owing to chemical disbalance in the blood and lymph, certain groups of cells cannot perform their work in a healthy manner—that they function abnormally.

The causes of such chemical upsets, resulting in functional disturbances, may be set down at once. The probability is that, as in the case of formative troubles, a glandular mal-activity in the mother at the time of gestation is the chief underlying cause. The difference is that, instead of a grave disbalance, resulting in a gross and easily discernible monstrosity or deficiency in the offspring, we are here dealing with a less marked distress of the mother and a correspondingly more subtle disease of the child. Speaking broadly, these functional troubles seem to rest upon a prenatally influenced unhealth of the glands in the child. Instead of an imperfect brain, such children seem to possess defective endocrines. And the defect cannot be gross, as in the case of the cretins. Indeed, these functional disturbances are frequently so recondite that

they are not observed in childhood at all and do not manifest themselves until later in life, when stresses and strains bring them out. Adolescence, with its ferments and fires, calls many of them to the surface. In women some of them crop out only at the climacteric. In men the reverses and anguishes of life force these defects from their concealment to the face of the sun. Or they may be roused and made manifest by the drains of other diseases, such as most human beings encounter on the road.

Whether we ought to conclude that wherever such functional disorders appear there has been some weakness present from birth is a matter for further study and debate. The most conservative attitude is that such derangements may originate later in life from shocks, illnesses and strains or from grossly disadvantageous environmental conditions in general. Numberless cases have been observed where no slightest trace of early defect could be found and there are other excellent reasons for believing that functional disturbances may find their first beginning in adults. For instance, if a mother transmits such defects through her own glandular disturbance she would appear to have acquired her disorder, and the chances are that this happened at a time proximate to the birth of her damaged offspring. The only other theory would place the whole blame upon a long line of consistently weakened ancestors—and against this view there are too many sound evidences. We may assume that a diseased condition must have a definite beginning.

On the other hand, however, the number of cases in which the defect has been present from infancy is much greater than ordinarily believed. Parents and many physicians commonly overlook in young children the signs and symptoms which are to the neurologist the clearest indicia of glandular troubles. Many a peevish and wailing baby and many a disobedient or incorrigible child is allowed to pass along under the disguise of temperament when a specialist would immediately discern

the need of hormone adjustment. These are the children who make a great deal of trouble later in life.

Impulses may also flow from the sympathetic system through the spinal cord to the percept centers and thence to the intellectual center.

To make clear to lay readers the manner in which functional disturbances abnormalize human behavior and lead men of good and even excellent cerebral equipment to commit all manner of extraordinary or criminal acts requires a sketch of the nervous and mental mechanism. No attempt will be made to go into histology or anatomy or physiology except in a most skimming and superficial way. These subjects are too extensive for present treatment and they have already been carefully explored and bewritten by Loeb, Crile, Dercum and others, whose works are available to the interested reader.

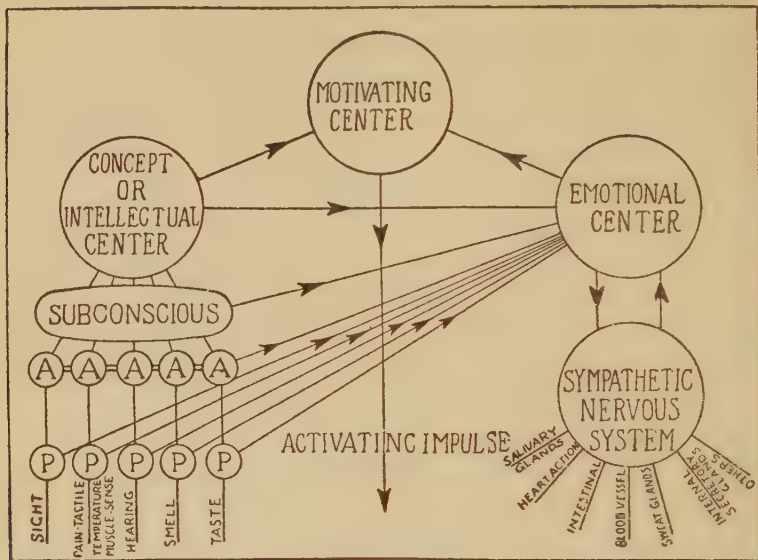
We may begin by considering the manner in which impressions reach the brain, the method in which they are there handled and the processes by which impulses are sent out from the brain to result in what are termed acts or actions. If we will consider the brain, for the time being, an intricate line of machinery, something like the central office of a telephone system, we will not find it difficult to trace our way.

Incoming impressions from the external world must pass through one or more of the sensory gateways—the eyes, ears, palate, olfactory organs, or the nerves which respond to the impressions of touch, temperature, muscular movement and the like. Other impulses also reach the brain through the sympathetic nervous system which controls the vegetative functions of the body, such as salivary secretions, intestinal action and, vastly important, the action of the endocrines. With these last we have no immediate concern, however.

A glance at the accompanying diagram (A), will aid in visualizing the process by which the impression from without passes through the centers of the brain and finally expresses itself in action. The impression passes from the sense organs

THE NEW CRIMINOLOGY

to the percept centers (P) and thence to the association centers (A). The impulse then passes quickly on to the concept and to the emotional centers where, with certain memory impulses



MECHANISM OF THE BRAIN

Chart to show the impulses generated in the human brain by a percept entering through one of the sense organs. An external stimulus reaches the brain through the percept center (P). From there one impulse travels to the association center (A), and another to the emotional center. Arrows indicate the paths of the other impulses.

aroused in the association centers and the subconscious area of the mind, a concept or complete picture is formed.

Meantime, however, part of the original impulse has also passed from the percept centers to the opposite or emotional center of the brain, where feelings are aroused. These emotions clash or combine with the impulses from the intellectual side of the brain which often act inhibitably. If the emo-

tional impulse is strong enough the man will act in correspondence with his feelings. If not, the intellectual side of the mind will control and he will act measuredly or cautiously. Or, he may act according to his feelings, somewhat tempered by his intellectual control. In any case, the original impulses must pass from the emotional and intellectual centers to a third great brain part, the motivating center, from which the impulses to action flow off (Activating impulse). This impulse causes the man or the beast to run, to fight, to eat, to drink, to move, what not?

Some doubt still exists as to the localization of some of these centers and the reader is asked to make certain reservations as to the spatial significance of the terms. We know with a good deal of definiteness where the various percept centers are situated and it follows reasonably that their corresponding association centers cannot be far distant.

For instance, cases of so-called psychic blindness have frequently been observed and studied. An individual so afflicted can see but he is unable to recognize the commonest objects. He will eye something as familiar as his fountain pen and not be able to say what it is until he has touched it and so brought an impression through the touch association centers into the concept center through another of the gateways. The point is that in psychic blindness a lesion has occurred somewhere between the sight percept and the sight association centers.

The sight percept centers in man lie on the medial side of the occipital lobe. These lesions have been seen to occur on the lateral surface of the occipital lobe verging into the temporal lobe, making it clear that the sight association centers lie on the lateral side of the occipital.

The intellectual organ is, so far as we know now, not properly called a center, since it seems to be spread over a large area in one or more of the layers of the cortex in order to make contact with the various association centers.

Neither are we able to localize the motivating center but apparently it must be closely associated with the intellectual or concept area and the projectional motor center. The last lies in the anterior central convolution, where it has been studied and its structure described.¹

What probably interests us more than anything else in connection with the present matter is the nature and localization of the emotional center. It is proper to say at once that neither has been definitely established. Attempts to locate this center bring out fascinating biological considerations. The first thing that occurred to anatomical students was that, since the emotional responses are much more primitive than the intellectual faculties, it was reasonable to seek their center in a phylogenetically older portion of the brain. While it was possible to conclude that the emotional center might have been evolved upward into the cortex, along with the percept, association and concept centers, there were contrary indications of a convincing nature.

The recent prevalence of encephalitis lethargica has furnished some of the most striking evidence. In post-encephalitic cases a general suspension of emotional responses is frequently observed. The faces of the patients take on a masklike expression which is due mainly to a loss of the muscular tone, which is controlled from the basilar ganglia. The patients also show no sign of color or feeling, all their acts taking on an automatic cast. They move and respond in a manner highly suggestive of animal reflexes and it is almost impossible to evoke in them any feeling of pity, sympathy, affection, sor-

¹ For details of the localization and structure of the brain centers see Schlapp, "Über die Ortisshen Verschiedenheiten der Grosshirnwinde," Berlin, Klin. Wochenschr., 1898 XXX v. 784, "Über Differenzen im Bau der Hirnrinde," Archiv für Physiologie, Leipzig, 1898; 381 seq., "Der Zellenbau der Grosshirnwinde des Affen *Macacus Cynomolgus*," Archiv für Psychiatric, Berlin, 1898, XXX 583-607, and "The Microscopic Structure of Cortical Areas in Man and Some Mammals," Am. Journal of Anatomy, Baltimore, 1902-03, II, 259-281.

row or pleasure. They even respond only weakly to anger stimulations.

The significance of all this becomes clear when we learn that the post-encephalitic condition is due to an inflammatory process in the basilar ganglia. To the clinician, at least, this seems clear enough evidence of the location of the emotional center. Moreover, this discovery conforms to the earlier reasonings, for the large ganglia at the base of the brain are the most primitive parts of that great collection of organs. Such ganglia are found in selachians and other primitive vertebrata.

The important point, however, is the recognition of the opposite sides of the mind, the intellectual and the emotional. If we conceive of the latter as the focus of human feeling, passion, stress and excitement and the former as a kind of control system we shall not be far from the original truth. There are reasons to believe that this brain center in more primitive creatures was no more than an inhibitive organ, which means, to be sure, that it was the storage organ for the first primitive memories, since fears and inhibitions are based on experiences of the creature. In man these memories have, of course, become manifold, multifarious and endlessly complex. Consequently the intellectual side of the brain has grown in bulk and importance. It is there that present impressions are hooked up with the memory of past experiences, with associations, in other words. Here the concepts are formed. Here the thinking or ratiocinating is done. This is the seat of man's mental life.

Naturally, this side of the brain exercises a strong influence over the emotions and restrains the impulses which flow from the emotional center. This ability of man to control his feelings and inclinations, so long as they are not too strong, is the basis of the theory of will or free will. But we may leave this aside for the present, with the reservation that this control

depends not upon any soul or spirit or élan but upon the whole past of the human being, the whole content of his memory, his stored concepts—what is sometimes called the psyche.

But either the intellectual or the emotional portions of the brain may become diseased or disordered, in part or in whole. With the former we have no concern at present. On the other hand, disturbances in the emotional centers of the brain are the cause and explanation of the abnormal conduct of the class of individuals we are here set out to study. The question as to how such disturbances ordinarily happen brings us back to the individual nerve cells and the transmission of impulses.

The human nerve cell contains, according to bio-chemists, a substance described as a complex colloid. In this plasm is stored a potential energy which is converted into kinetic energy by the action of an impulse from without, the latter being undoubtedly of an electrical character. This has often been demonstrated by means of tests in which ordinary galvanic current was transmitted along sections of the living nerve fiber. Accordingly, when a man sees an object and that seeing is transmitted to the sight center in the occipital lobe of the brain, what has taken place is an electro-chemical reaction. An electric impulse has so changed the colloid in the nerve cells along the sight tract as to convert some of their stored energy into kinetic force, which carries the impulse along, awakens the associations by means of further conversions of the stored energy in the association centers, forms concepts through similar reactions in the concept centers and, most important of all from the present point of view, awakens feelings or emotions by a similar conversion of energy in the seat of the feelings, probably the basilar ganglia, as already noted.

As in electro-mechanics, there is a minimum required strength of current necessary to perform fixed labors, so in the human body there is a normal strength of impulse needed to cause the conversion of energy stored in the cell colloids. An im-

REACTION POINT IN NERVE CELLS

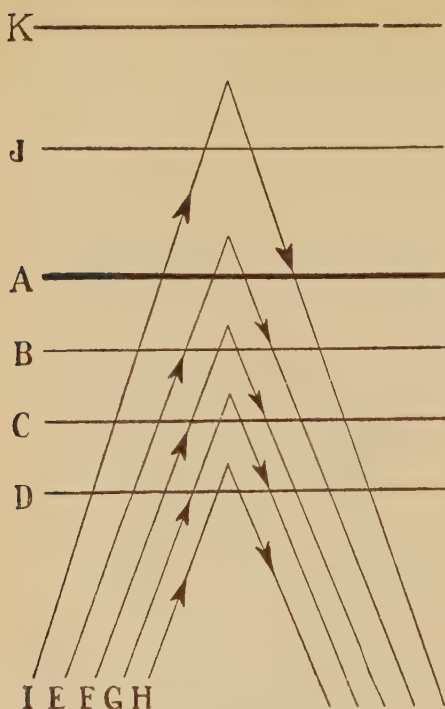
pulse falling below a certain fixed strength will cause a reaction of a weak character in only a few cells and carry only a mild impression to the emotional and intellectual centers. And we all know, of course, that light impulses below a certain strength or frequency are invisible and sound impulses below the standard requirement inaudible to man, though they may be heard by other creatures and have been mechanically recorded and amplified. These are the subliminal impulses or reactions of the psychologists.

Accordingly, it is obvious that the nerve cells have a more or less fixed explosion or reaction point; they respond only to stimuli above a certain fixed strength if they are in normal condition. But we know that this norm may be disturbed with the result that the cells react to very much weaker stimulation or refuse to react unless the impulse stirring them is exceedingly strong.

To this reaction point in the nerve cells has been applied the term the threshold of functional activity. It may be visualized as a kind of dam. To cause a reaction, the waters behind this dam (the external or internal impulse) must rise high enough to flow over the top. If the impulse is not of sufficient volume there is no overflow, no reaction. If the volume or force of the impulse is great there is a strong overflow or reaction.

But, as already noted, this threshold or dam may be raised or lowered. If we give a man an overdose of cocaine his thresholds in the emotional and motivating centers are lowered and he will act excessively and without caution or judgment. On the other hand, if we administer sufficient ether or chloroform the thresholds in the conscious centers are raised so high that no impulse can reach these cells. The drug has so stabilized their plasm that impulses which would ordinarily give violent reactions now fail to explode the colloids at all.

Much the same result is achieved in the human being by the disturbance of the internal chemistry, which means an un-



THRESHOLDS OF FUNCTIONAL ACTIVITY

An impulse of a certain definite strength is required to explode the stored energy in a nerve cell, and under normal conditions the strength of this impulse is fairly constant. This condition can be visualized in the above diagram, where the line A represents the normal threshold of functional activity. The impulses, I and E, are strong enough to produce a reaction, but the weaker impulses, F, G and H, have no effect. Pathological conditions and certain poisons have the effect of raising (J) or lowering the threshold. When the threshold is lowered (B, C, D), very slight impulses produce a reaction. But it may be raised so high (K) that the strongest impulses (I) will produce no effect. Ether and chloroform raise the threshold of the conscious centers in this way, and are accordingly used as anæsthetics.

healthy condition of the endocrines. In cases of hypothyroidism (lack of thyroid), for instance, the nerve cells are abnormally stable or phlegmatic, refusing to respond to ordinary impulses of many kinds. As a result the hypothyroid individual is slow, dull, insensitive, poor in comprehension or, if the deficiency of the thyroid hormone is marked, feeble-minded, cretinous or, if the trouble develops in later life, myxœdematous.

Oppositely, if there is an excess of this hormone the individual is abnormally responsive to impulses, feelings, influences. The secret is that many of the cells of the nervous system are extraordinarily sensitized by the excess of this chemical in the blood and lymph. Their thresh-

INFLUENCE OF THE ENDOCRINES

olds are lowered and they respond to impulses which would cause a little or no explosion of energy in the normal cell.

Similarly, the excessive activity of the suprarenal glands in time of stress and danger, referred to in previous chapters, makes certain cell groups abnormally responsive, also by lowering the threshold. This is a provision of nature which renders the animal ready to meet danger by unusual alertness and unusually rapid responses and movements.

We may refer here to Diagram (B), where an attempt is made to visualize the raising and lowering of the thresholds by lack or excess of certain hormones or by artificial means.

There is, however, a further complication. The gland chemicals, like foreign chemicals and the various toxins, act selectively on various neuron groups and nerve centers. That is to say, an excess of thyroid hormone will oversensitize certain groups or centers which control definite activities of the human machine. Chronic overabundance of suprarenal hormone will cause the disturbance of thresholds in other centers or groups, with the result that the functioning of other parts of the mental and nervous machine will be abnormal. The same is true of the chemicals from the pituitary, pineal, interstitial and other secretory glands, each of which has its selective activity, its control in other words, of some vital part or parts of the great mechanism.

The student will not have to be reminded again that the glands form a kind of chain and that the marked disturbance of one gland will lead in no great span of time to the involvement of one or more or all of the others, with the final result of a complete chemical disbalance in the body.

What needs to be pointed out more clearly is the fact that this relative disturbance of several glands (pluriglandular involvement) will raise or lower the thresholds in numerous and various parts of the nervous mechanism and thus lead to a most complicated disease situation, which may be most

mild or exceedingly grave, according to the degree of chemical disbalance.

Upon this fact rests the control of character and behavior by the chemical forces of the body—by the glands. If we stop to consider the characteristics of certain gland types as tentatively set forth in an earlier chapter and mark now that the disturbance of various glands and the mixture of the chemicals are subject to endless degrees of gradation, it will not be hard to understand how the infinite variety of human beings and their interminable variations of conduct, ability, character, appearance and adaptitude are brought about.

We have but to consider the uncounted number of neuron groups in the human body, each and all of which are subject to sensitization or desensitization by unhealthy chemistry, to gain some conception of the vast field for differentiation that lies open to these influences. There are, for instance, between nine and ten billion nerve cells in the average human cortex alone, according to the estimates of eminent anatomical and histological experimenters. It staggers the imagination to think of what the total may be for the other parts of the brain, the spinal column and the utterly uncountable major and minor nerves of the body. Undoubtedly the number of cells and of neuron groups differs greatly in individuals, just as the size, weight and development of the brain vary. The highly developed man of noble race, superior ancestry and good environment and training unquestionably possesses a number of neuron groups vastly greater and far better developed than could conceivably be found in a poor specimen of the same race or in a savage.

It may be inferred from this that superior races and individuals are subject to more various and complicated derangements of the normal thresholds, and this probably is true though other factors must be reckoned with before one may venture upon any of the broad and interesting conclusions that might be drawn.

DEFECTIVE EMOTIONALISM

If we have now clearly in mind the manner in which the threshold of functional activity may be raised or depressed in the individual cells, through the under- or oversensitizing of the plasms by chemical action, we have found the key to abnormal or diseased emotional responses and to that great peril to modern civilization, emotional overstability or instability. The strain of modern life and the terrifically rapid changes in our environment, with which the adaptive qualities of the human being have been unable to keep pace, have caused the glands of millions of persons to become more or less disordered. The result has been the prevalence of emotional diseases of many kinds, all due to abnormal explosiveness of the plasm in the nerve cells.

We have only to take the most ordinary situations in life to observe the operation of such defective emotionalism. Mr. A. has a wife who nags him, the nagging being itself the symptom of an unhealthy nervous condition. Ordinarily, A. takes his wife's tirades with a good deal of patience and resignation. He is irritated but resigned. He shrugs and lets her rant. But A. passes through a great strain, an illness, a siege of business reverses, a series of worries and disappointments, or he is exposed to severe shocks and griefs. He does not see any change in his health. He hasn't lost weight or appetite. He doesn't look ill and he doesn't feel weak or specially depressed. All he notes is that he is irritable and short-tempered. The next time his wife begins to nag him he flies into a rage and strikes her.

The scientific explanation has already been set forth. The nagging of his wife had always irritated him to some extent and sent more or less mild impulses to his anger-emotional center. But the thresholds in these cells were then normal and his cell plasm stable. As a result his intellectual centers were able to cope with the situation and restrain him from any rashness. Now, however, his cell plasm in the emotional

region has been destabilized, the thresholds depressed. Consequently, the same irritation which formerly aroused only a mild wave of feeling in the emotional centers now causes a strong and overpowering emotional impulse to flow off to the motivating center. The intellectual or inhibitory side of the brain is no longer able to check this surge of emotion and the man strikes furiously.

Or we may take the case of a thief. He sees a purse lying on a table and knows that it contains fifty dollars. The normal man might feel the desire for fifty dollars. He might need it sorely enough. But his intellectual control would at once advise him that the money was not his and he would draw away from the temptation without trouble. But the thief is emotionally disturbed and this is the dominant fact. He goes toward the coveted prize and then draws back, his intellectual center cautioning him with a wave of fear. He struggles between this fear and his desire. The contending impulses flow back and forth. Finally a wave of emotion sweeps the thief. He moves forward. He takes the bag. He flees. This thief very likely has tried to resist. He has told himself that his act is wrong, that it is dangerous, that imprisonment awaits him if he is caught. He has attempted to exercise what he has been taught is his will. But before the reactions of his chemically disturbed bodily mechanism all willing and all fear have broken down.

The murderer is in the same situation. He conceives a hatred for some person who stands in his way or who has done him a real or fancied injury. The concept of killing this enemy comes into his mind. Such ideas occur to all men at times, as has so often been observed and with such false conclusions. The normal man rejects the idea almost as quickly as it is formed. In a little time his anger subsides, his hatred of his enemy softens and he is able soon to see the matter in some correct and normal proportion. But the man capable of murder

is disturbed in his glands, cells and nerve centers. The concept of killing is rapidly followed by another concept of the manner of carrying out his deed. Perhaps he thinks of a revolver, or a poison phial or a knife. The concept of a plan comes to him and the concept of a concealment, a flight and an escape. No doubt he struggles back and forth, drawn to his victim and away from the deed of blood by the contentions of his emotions and of his inhibitory brain parts. This very struggle works him up the more. The time comes when he can no longer resist. The idea has taken possession of him. He makes his plans, always under strong emotional excitement, lies in wait, strikes the blow and makes an attempt to direct suspicion from himself.

Not until he has consummated his crime does the emotional strain and excitement abate. The murder seems, as so many killers of this type have explained, to give him relief from the terrific pressure of an obsession.

We come here to what is termed the point of pathological action. There is, hypothetically at least, a neutral point in which there is no flow of feeling and no action. As soon as there is a stimulus of any kind there is an emotional wave, which may be low or high, according to the strength of the incitement. Hypothetically also, and for the purpose of a working explanation, there are positive and negative waves. Anger, for instance, is rated as a positive emotion; fear as a negative one. The lowering of cell thresholds makes possible the creation of a wave of feeling so high that it is abnormal or diseased. When this happens the point of pathological action is said to have been reached and it is then that criminal deeds are done. If the cell thresholds are low, it stands to reason, the impulse of any given strength will create a much higher or stronger wave of feeling, because a greater number of the oversensitized cells will have been exploded and also because the explosion of the colloids in each cell will be more severe.

Having come so far in the description of the physical basis of much abnormal conduct, in the analysis of the criminals whose causation befuddled the earlier criminological scientists, we find ourselves confronted at once with another vexing problem. If emotional instability is the explanation of so much criminality and unhealthy endocrines the cause of this situation, does it follow that sufferers from emotional disturbance are all criminal or criminally inclined? Every practicing neurologist knows that the negative answer must be given, since perhaps the majority of such sufferers are upright, well meaning unfortunates, many of them excessively timid and recessive, afflicted with all kinds of phobias and inhibitions. That being so, what are the determining factors?

They are two, the first physical, the second environmental. The former has already been indicated but it may be briefly clarified. Some kinds of gland disturbance render the sufferer timid and retiring; others induce to excessive boldness, rashness and aggressiveness. Thus a good deal may depend upon the dominance of one hormone or another or, to be put another way, upon the gland constitution of the disturbed individual. Thus, persons suffering mainly from hyperthyroidism are rarely criminal or, if they are so afflicted, they will be no more than sneaks or pickpockets. Oppositely, individuals in whom the excess of interstitial and suprarenal hormone is dominant are likely to be of the violent criminal type, killers, thugs, gangsters, bandits and the like.

But more complicated and more interesting is the second interposition of environment. We have already seen how the environment may harmfully affect the mother and cause the birth of deficient or defective individuals. And we have noted that adverse environmental conditions may cause the glandular and nervous derangement of individuals who came into the world with normal health. We must now observe the effects upon character and behavior of the personal environment, which expresses itself in the experiences of the individual and

records itself in the memory content, the concepts stored in the brain.

How are these concepts formed and put away? The simplest illustrations will perhaps be the most effective.

Let us say that our subject sees an apple. An impulse travels from the retina of the eye to the percept center in the occipital lobe of the brain. Here some potential energy of the cells is exploded and the impulse caused by the sight of the apple travels to the association center. The subject now remembers the general associations that belong to the apple—its smell, taste and touch, even the sound of its falling. Next there flash automatically into the picture great numbers of secondary associations. A few stand out. For instance, the subject may recall vividly some event closely or distantly connected with an apple. The memory content seems to project itself into the process just at this point, when the impulse has caused a reaction in the cells of the association center.

Let us assume that the subject remembers having given an apple to an old sweetheart. At the time she laughed and ridiculed the gift. Immediately there comes into the higher concept center the idea of something embarrassing and ridiculous. Consequently, there is awakened in the emotional center a wave of pleasurable feeling which meets a wave of unpleasant emotion awakened by an impulse from the concept center, where the idea of the old unhappiness and pain has been revived.

The concept center is the point in the brain mechanism where percepts coming from without meet with associations and memories, to be digested into a complex mental image. In the case of the apple, the concept will be a complete instantaneous review of all the matters previously recounted, together with an intellectual analysis and conclusion.

This picture and conclusion will be stored in the cells of the concept center as memory, to be frequently or rarely re-awakened. It does not follow that the same old concept will

be reformed every time the subject sees an apple. The circumstances under which it is seen, the responsiveness of the man at the time and other factors will cause variations. Yet, by way of a mechanical illustration, it is probably a fact that precisely the same concept will be called forth again every time the same cells are exploded. Thus, theoretically, if an impulse reaches Cell 997, Cell 10,763, Cell 13,458, Cell 324,765 and Cell 543,234, a certain fixed concept will be roused and every other impulse that reaches just these cells and no others will continually arouse precisely this same concept—the same memory.

The emotional responses, of course, play a part in all this. It is probably a fact that no impulse from without reaches the brain without awakening some kind of emotional wave, however slight and unobserved. Indeed, our feelings color and throw into the personal perspective every experience in life, every thought, every reaction. Otherwise life would be void and without beauty, personality, individuality or true significance. It is this flow of emotion connected with every thought, every brain activity of man, that makes what is termed human nature, that renders human judgments so fallible and various, that makes a mock of such notions as detachment, impartiality, judiciousness and the like.

The storing of these concepts or bits of memory begins with the first hours of life. The moment the infant presses its lips to its mother's breast, hears her voice or opens its eyes upon the great portentous light of the world the cells of its tender brain begin to register memories and shortly to form associations and concepts. The child is not more than a few seconds alive before the first crude hieroglyphs are graven on the *tabula rasa* of its mind.

Others have called attention to the vast importance of these very earliest impressions, so that we need not burden the reader. It will be sufficient to consider the memory content as a whole. As the child comes up in stature and experiences its

brain naturally absorbs and holds millions upon millions of further concepts or mnemonic scraps, many of which may seem at times to be disconnected and meaningless but, taken together, they form an exceedingly intricate but continuous weave which is, when taken into relation with the formative and functional features of the mechanism already described, the determinant of character and conduct throughout life.

We need not go far to see the personal environment at work. Johnny A. is born in a slum. He is reared in poverty and ignorance. As a child he sees little but violence, squalor and drunkenness in his parents. He soon learns that money is the chief requirement of life, that its lack is the whole sum of his disadvantage and that to get it by any means whatever is both justifiable and necessary. In the streets he sees nothing but cowardice, force and ruffianism. He probably associates with boys who steal, who attack the weaker and who talk and plan worse. In his school he is certain to be cast with the wolves and condemned by teachers and by children better situated socially. Without tracing this boy's experiences further, it becomes apparent what kind of concepts will be stored in his memory cells and what kind of pictures will be awakened by every fresh impression that invades his brain throughout the course of his life.

But Johnny B. is born to prosperous parents. His infancy is guarded, his childhood carefully supervised. He sees in the conduct of his parents and their agents constant examples of dignity, self-sacrifice, courtesy and gentleness. His mind is filled with the lessons of history and the teachings of sages. In early manhood he is sent away to college, where he meets other youths of his own age, learns a good deal about some of the phases of life previously unknown, acquires some mild vices, but also takes into his memory more and more of the cultural treasure of his age and the past. No one needs to be reminded of the vast gulf that flows between this man's concept content and that of Johnny A.

The result? We may take the crudest example of opposite mentation. Johnny A. hears of a fight, instantly he thinks of a bloody pugilistic encounter, of a knife in the dark, of the revolvers of gangsters and assassins, of personal vengeance, of crime. But when Johnny B. thinks of a fight he is more likely to have awakened from his memory the encounters of mythical heroes and historic warriors, the struggles on the football field or, at worst, some set-to at fisticuffs with the boy across the street. If he associates himself at all with a furious or bloody deed it is in some detached or romantic way. Yet he may be at least as brave as Johnny A. Probably where self-sacrifice and devotion to a cause are required he will prove the other boy's superior.

Stated in other terms, this is, to be sure, a commonplace and one on which the environmental school of criminologists insisted with an exaggerated and inaccurate emphasis. They saw, of course, that poverty and lack of advantage breed violators of the law and that criminals are likely to arise from the various social classes in inverse ratio to the comforts, protections and other advantages afforded their children. But, as we have already pointed out, these gentlemen fell into the logical quicksands when they tried to explain how the sons and daughters of excellent and well-gilded families occasionally slipped into the criminal fold or why it was that a great many boys from the slums and gutters of society develop into upright and notable men.

The answer may be briefly stated again: A healthy boy, who is neither mentally deficient nor emotionally defective, will probably not become a criminal or a derelict, even though born and reared in poverty and abasement, not even when exposed to evil example. It is only the deficient and emotional types that commonly go the way of damnation. On the other hand, if a rich and well-protected son is either mentally deficient or gravely disturbed emotionally, and especially if he is, as so frequently happens, both deficient and defective, he will find

evil example in spite of all reasonable precaution, he will mold criminal concepts out of materials that normally form healthy and socially sound memories.

The point is that the personal environment is a secondary matter, the determining factor in all cases being the mental, nervous and glandular soundness of the individual. A diseased nervous system is incapable of healthy or social responses, even under the best practicable training. On the other hand, a thoroughly normal equipment will probably be little damaged even by exposure to extremely bad environment.

It is necessary to caution the reader against a quite natural misinterpretation and limitation of the terms "emotional criminal" or "emotional instability." The layman is hardly to be blamed if he thinks of emotion only in the usual terms and associates with that word only the more obvious feelings of love and hate, pity and fury, sympathy and rage, grief, compassion, joy and the like. Accordingly he is inclined to think of the emotional criminal as one who does his deed in rashness, anger, temporary insanity or under the lash of overpowering sudden temptation.

Emotion in the scientific sense has a much broader meaning and emotional criminals must be much more subtly analyzed. Perhaps the average man will realize the difference best if he be reminded that millions of men and women who are in no sense criminals or strays, but whom one meets every day in the ordinary discharge of business and social affairs, are emotionally disturbed in some more or less mild way. They lack normal control of their actions in the most various and sometimes intricate respects. One man is too easily affected by sympathetic appeals, another cannot restrain a nervous cackling, another is an inveterate chatterer, another suddenly breaks into whistling in his office or in the midst of a social gathering. Many persons go along the streets talking aloud to themselves, while others suddenly begin to rush and run, for no good reason. All these persons are emotionally disturbed, as

are the hysterics, pathological liars, self-deceivers and accusers, unhealthy imaginatives, phobiacs and countless others. Thus criminal emotionalism is only one branch of emotional unhealth and crimes of passion or violence but a small phase of this branch.

Further elucidation of this matter, this maze in which criminal science has been wandering for generations, will be found in the personal and clinical histories of intelligent but emotional criminals which follow.

CHAPTER III

EMOTIONAL CRIMINALS

"Sir," said Dr. Johnson, "we know that the will is free, and there's an end of it."—BOSWELL.

A FEW years ago various taxicab drivers in the outlying parts of New York City had been held up by a strange pair of bandits, a youth of eighteen or nineteen years and a young girl. Their criminal technique was strikingly simple and efficient. They hailed a cab, instructed the driver to proceed to some forsaken bit of road and there presented a revolver to his back, stripped him of any money and jewelry he possessed and commanded him to drive away. Finally the chauffeurs laid a trap for the pair. When they next entered a cab they were followed by other drivers, who waited until the holdup had been committed and then surrounded and overawed the boy and girl. They found, to their stupefaction, that the revolver of the banditti was glass.

One of these post-adolescent criminals, the girl, was examined in detail at the clinic at Post-Graduate Hospital.

Mary J., (Plate 17)—Age 16 years and 10 months. Mixed Austrian (Germanic) and Czech (Slavic) blood; first native generation in this country. Her blood pressure was high, 133 instead of the normal figures of 90 to 110. Her diastolic pressure was 95, as against a norm of 40 to 70. The basal metabolism test showed her to be only slightly subnormal. No carbohydrate tolerance test was obtained because of the prisoner's resistance. Carefully examined and tested, she yielded an Intelligence Quotient of 105 or better than normal. She was, in fact, more than usually alert and of better than average general mentality. Her whole manner was shrewd and defiant.

This girl revealed, upon investigation, the typical history of a very large class of emotional criminals. As a child she appears to have been fairly normal and exhibited none of the peculiarities which marked her later. (No doubt there were indicia which her parents and relatives were not capable of noting.) She was one of four children, a brother and a sister surviving. Both of the latter proved to be normal, law abiding and respectable. Anna was the youngest child. The father died young and the mother in middle life.

According to her elder sister and brother, Anna began to exhibit peculiarities of conduct and attitude shortly before the outset of menstruation. She changed, suddenly, according to her relatives, from a normally obedient child into a sullen and defiant adolescent. She showed the utmost callousness to her mother in her last illness, was little if any affected by the parent's death, frequently lapsed into violent emotions and physical attacks on those about her, exhibited no sense of property, used the clothing of her sister against her wishes and fought and screamed when reproved, began to paint her face and lips at the age of 13, dressed herself with the greatest immodesty and generally exhibited the usual traits of theatricality and exhibitionism.

She was soon leaving home without permission and remaining away at night without explanation. Her school work suffered through inattention and truancy, until she finally refused to attend at all. Her sister repeatedly caught her at needless or wanton lies which bear almost the mark of pathological deception. Finally, she left home with an older girl and took up her abode in a cheap hotel room with the stripling who shortly engaged with her in the taxicab holdups.

In the course of the clinical examination and questioning, Anna exhibited the utmost effrontery, forwardness and disregard of her peril. Her boy friend had suggested that they go holding up taxicabs, that they could have a lot of fun doing it. So she went along, for the fun of it and to get a little excite-



PLATE 17

A GIRL BANDIT

ment. She thought there would be a kick in it, to use her own terms. Oh, yes, she supposed she'd be punished for it, sent away for a while. She didn't know or seem to care for how long. Yes, she was in the habit of doing what people proposed, if she liked them. What was the use being a dead one? It was almost impossible to move her by appeals to sympathy or pity but she responded excessively to anger irritations and displayed the usual aggressiveness and quick fury of the interstitial-suprarenal type of emotional defective.

The inferences are plain and simple. This girl probably had a glandular defect from birth which did not clearly exhibit its symptoms until the stresses of puberty aggravated the chemical disbalance and marked the special mental and emotional trends of the victim. The easy suggestibility of Anna is one of the patent peculiarities of mental deficient and emotional defectives alike. This girl, predisposed to irregular conduct by her disturbed chemistry, went from a decent home into a series of outside contacts. Out of these she picked up, like children and inferior persons generally, without any sign of mental or social selection, only the mischievous, evil and destructive concepts, which necessarily presided over her disturbed emotional reactions.

Anna, because the law makes no provision for the proper handling of such cases, was not placed under medical care but committed, through the helpless humanity of her judge, to a House of the Good Shepherd where, it was hoped, punishment, instruction and discipline would redeem her. To this well meaning but futile ministration she responded by promptly scaling the walls and making her escape.

It is not possible to proceed with a consideration of the emotional type of criminals without devoting close attention to the kleptomaniacs, who strikingly exhibit the evidences of glandular disorder. Individuals given to impulsive thefts of unhealthy motivation and the whole subject of their peculiarities and causation have been studied for more than fifty years by a

long line of physicians, among whom Krafft-Ebing, Bloch, Forel, Gross, Duboisson and Aschaffenburg are conspicuous. Special studies have been made by Marbold, Leppman, Bontemps, Letulle, Kersten, Didier and a hundred more. Freud, Jung, Adler and others of the more recent psycho-analysts, have given the disorder marked attention and Stekel, in the work already mentioned, has devoted to kleptomania the greater part of two heavy volumes. The literature on the subject is almost endless, especially if we cross the line into fiction and journalism. The late William James went so far as to list kleptomania as one of his famous "human instincts."

Certain facts are obvious: namely, women are much more frequent victims of kleptomania than men; the pathological interpretation of the kleptomaniac's act is supported by the fact that there is no mercenary motive as in common thefts, which are distinguished from kleptomania by this circumstance; women most commonly yield to their kleptomania just before or during menstruation, in pregnancy and at the menopause; women in anemic situations, women psychically depressed or weakened by diseases and women under strong emotional stresses are common offenders of the kleptomaniac kind; men found afflicted with kleptomania are almost without exception either mentally unbalanced or grossly disturbed emotionally; most of these males are homosexuals.

The connection between sexual phenomena and kleptomania was noted long ago by Aschaffenburg and Krafft-Ebing, as well as by others, only to be enormously accentuated by the psycho-analysts. Mention has already been made of Dr. Stekel and his borrowed theory of sexual toxicosis. The interested reader is also referred to Freud, Jung, Adler and Silberer for elaborate symbolistic schemes and interpretations by which an explanation of this connection is attempted. The intention here is not to deny that there is a relationship between sexual manifestations and theftuous or other criminal acts, but to make clear what that connection is and how it is established.

MENSTRUATION AND KLEPTOMANIA

The early observers saw, as has every student since, that women were wont to commit their strange thefts at certain times, as noted above. What was more natural than to postulate the prevailing sexual situations as the causes of the social misconduct? Did not women at such times display an unusual excitability and in many cases the indubitable symptoms of hysteria and even of temporary mental unbalance? Was it not also well established that homosexuals and other sufferers from inversion or perversion were commonly of criminal inclination or habitude? The facts seemed then convincing and are now past dispute.

The only trouble with the older explorers in the field of kleptomania was that they failed to hit upon the correct connectives. Either they were vague in their ideas of the manner in which sexual disturbances affected the social conduct or they erected what must now be looked upon as wholly metaphysical or even mystical explanations and theories. The truth was unguessed until the recent development of endocrinology revealed it.

As has already been noted, women at the menopause, before and during menstruation and in the gravid state find themselves in the clutches of a glandular upheaval. The clinical evidences of this fact are plain and clear. The thyroid gland swells palpably at such times; the metabolism is accelerated and the blood pressure reveals the abnormal presence of the hormone of the suprarenals. At the menopause, of course, there is a fundamental change in the glands themselves, always attended by grave disbalances in the chemical mixture. The corroboration of the laboratorian is still to be had in this matter.

Such gland disturbances at these times need no involved or recondite theorizings and surely there is involved nothing that might justly be termed a sexual toxicosis. The simple fact is that the sex glands, which are the most primitive of all and still retain a kind of general hegemony over the other organs on the endocrine chain, are overactive at menstruation, dis-

turbed during pregnancy and probably in the course of a revolutionary change to severe underactivity and extinction in the period approaching the menopause. The fact that none of the important endocrines can become deranged in its activity without sorely affecting the others here comes into play. The unrest in the interstitials quickly communicates itself to the supra-renals, thyroid, pituitary and other glands, with the result that the whole bodily chemistry goes awry, the cells in the important centers of the nervous system are oversensitized and the afflicted human being acts irrationally—without the usual powers of inhibition.

It may be unnecessary to point out that there are many women in whom such disturbances of the chemistry are chronic and who are, accordingly, likely to commit criminal acts of the kleptomaniac or other emotional varieties at any time. Even in these unfortunates, however, the criminal liability is always exaggerated at the various sexual crises.

Two interesting cases may be cited by way of illumination:

Lilly G.—This woman, who was 52 years old when examined, was still in the menopause stage. There were traces of insanity and invalidism in her family. The patient herself had been a school-teacher from early life and borne a most excellent reputation, though noted for mild eccentricities at special times which, on questioning, proved to be the menstrual periods. She had always been scrupulously honest and exhibited an almost exaggerated sense of duty and devotion. She had denied herself for many years in order to support helpless or indigent relatives, had reared two young children who had been orphaned, had an unusually good record as a teacher and had the respect and sympathy of every one who had come in contact with her.

Shortly before the onset of her menopause, the patient admitted, she had been seized with homosexual tendencies and had on a single occasion been intimate with another woman. Later this inclination subsided but was succeeded by an intense

periodic nervousness. This was aggravated by the shock and grief occasioned by the deaths, within a few months, of three near relatives to whom the teacher was deeply attached. Her excitement was such that she could not bear to live in the town where the deaths had happened and where she taught school, so she removed to New York and lived in hotels, traveling back and forth to her classes every day.

One afternoon this woman strolled into a department store to buy some stockings. She had been feeling depressed and nervous. In passing along an aisle she came to a counter where some suit cases and traveling bags were displayed. She stopped automatically to look at them. A feeling of vagueness and uneasiness came over her. As she examined one of the handsome bags she was seized with sudden trembling. Her knees sagged under her, her heart pounded and the perspiration stood out on her wrists and temples. She saw and heard indistinctly and seemed surrounded by a mist. Unable to resist the impulse that swept her, she took the large, obvious, quite unconcealable bag and attempted the dull folly of trying to walk out of the store with it. She was seized by store employees, questioned by the house detectives and shortly released when her condition, position and past good record were made clear. She had no use for the bag at the time, having several good traveling cases of her own. Also, she had enough money in her purse to have bought several such articles.

A few months later Lilly found herself in New York with an hour to kill before train time. She was drawn to another department store and tried to resist the impulse, being both conscious of the danger and somewhat frightened by her recent experience. But she went against her own judgment and in spite of fears. In other words, the inhibitory power was in abeyance, owing to the irritation of the cells in certain neuron groups by a disordered chemical fluid. Once more she was attracted by some objects hardly worth stealing—stockings, according to the record. She admired them, was seized with the

same kind of nervous attack and tried to make off with a few pairs. She was again caught and this time was held for the court, with the result that she was referred to the clinic for examination.

She was, as might have been expected, in a state of exaggerated emotionalism, revealed high blood pressure, variable pulse, disturbed metabolism and other symptoms of chemical abnormality. These latter were not so marked as might have been expected and this fact seemed to argue a disease in some of the glands whose condition is not revealed by the tests now available and in use. The surest proof, however, is to be found in the treatment and its results. Lilly was given sedatives and various gland substances which practice has shown to be effective in pluri-glandular involvements. The proportions of the various hormone extracts was changed from time to time as the degree of recovery seemed to suggest. In a few weeks Lilly was greatly changed for the better. A position in a suburban private school was found for her where the attending physician watched her continued gland medication. To-day, after the elapse of six years, she is in good physical condition, her nervousness has subsided, she has had no recurrence of the kleptomaniac attacks and she has been teaching school and attending to her small flock of children steadily and with marked patience and ability. She may be said to have made a permanent recovery.

Alice B.—This woman, thirty years old, was the wife of a wealthy man, generally rated a millionaire. She was a mother, led a happy home life, was indulged in every possible way and enjoyed a great deal of personal freedom. Careful questioning failed to reveal any repressions or forbidden yearnings but it did disclose a typical gland case history. The patient could not remember any marked trouble in her childhood but on reflection said she had always been high strung and sometimes moody. At 13, when menstruation began, she was extremely nervous and restless at times, only to be seized on other oc-

casions with fits of depression which were much more marked than the ordinary storm and stress of adolescence. She had always been given to imperative actions of the ordinary kind and remembered that all her life she had been strangely impulsive and subject to foolish and sometimes embarrassing actions, which are, of course, clear indicia of an emotional disturbance and lack of inhibitory power.

For some years after her marriage this woman seemed in much better health and markedly less nervous, but after the birth of her child she was again attacked by her old spells and sufferings. In a short time she noticed that she was always markedly worse at her flowering and that at such times she said and did many remarkable things which afterwards struck her with astonishment.

A little later Alice B. committed her first act of kleptomania. She was attracted to a counter of ordinary handbags in a department store, took one of them, concealed it in an umbrella and left the store unnoticed. She was deeply excited at the time and described the same symptoms noted above by Lilly G. These are, to be sure, characteristic of nearly all cases of kleptomania, as any reader may prove to his own satisfaction by consulting the innumerable case histories cited in the authorities already indicated. It seems almost hopelessly repetitious to add that they indicate to the endocrinologist an indisputable state of the sudden gross overactivity of the suprarenal and other connected glands. It is also significant that the suprarenals seem from all observation and testing to be most closely associated with the sex glands.

Some time later, Alice B. again entered a shop and took a handbag. This time she was not so fortunate, with the result that her husband had to rescue her from arrest and humiliation. But this lesson had no effect. She shortly committed the like act again and it was only her position that prevented her arrest. Now the offenses followed thick and fast. The woman never took anything but handbags, for which she had no earthly use,

each and every one of the pilfered purses being of an ordinary cheap sort that she would not conceivably have used. Her family came to understand her trouble and she was not permitted to visit the shopping district without a duenna or a trusted maid.

One afternoon several years ago, when the duenna was out of the city and the maid busy below stairs, Alice B. summoned her chauffeur, drove down Fifth Avenue in her limousine, stopped at one of the department stores where she had previously committed several of her kleptomaniac forays and promptly stole another purse. She was again seized by the detectives and this time, the patience of the shopkeepers being exhausted, was placed under arrest. She was later extricated from the trouble by her husband on the promise that she would be examined and placed under treatment.

The tests revealed an abnormally high basal metabolism and sugar tolerance, indicating a grave glandular disorder. She was placed on sedatives and measured doses of ovarian, supra-renal and other gland extracts. In a second test, made two months later, she showed evidences of rapid recovery and a third test at the end of the year revealed a normal situation. She has never since been attacked by her earlier troubles and suffers no longer from the urge to steal handbags.

This woman had suffered from her adolescence from retarded, deficient, and irregular menstruation, which are sufficiently clear indicia. She had no motive in stealing and the monomania for handbags clearly establishes the pathological nature of her acts. At the time she stole the last bag she had several hundred dollars in her purse and a charge account in the shop where her offense was committed. The stolen bag was worth about two dollars.

Emotional criminals of the other sex have been little studied from the physical standpoint and the literature dealing with them, except for rare exceptions, is a worthless jumble of vain theorizing or vainer metaphysic. Out of all the vast accumu-

lation of books, pamphlets, articles and reports the residuum of valuable contributions is sadly small. Steinach's discovery of the presence of the cells belonging to the opposite sex among the interstitial cells of homosexuals is, of course, of revolutionary significance and offers the precise solution to one of the classical mysteries. Some surgical progress has also been made in the relief of pressure on the brain, excision of focal infection areas and the like. But, speaking broadly, the male emotional offender offers almost a virgin field to the physical investigator. The cases to be cited here are selected from some ten thousand or more studied and treated at the Post-Graduate Hospital clinic.

James Blank, a young man of nineteen, served as a sailor in European waters during the war. His boat was attacked by submarines and he suffered from shock with the result of subsequent emotional instability. At the close of the war he was employed by a firm of brokers in Wall Street, with whom his alertness, energy and bearing made a favorable impression.

The employers were not aware of two strains under which this agreeable but unstable boy was laboring. He was the sole support of an invalid mother and, his earnings being small, the economic struggle was intense. In addition, the boy was being beset by one of the large family of financial district jackals. The rascal constantly besought young Blank to use some of the firm's money for a sure-thing speculation that would make him prosperous in a few hours. Under the circumstances the temptation was great and the boy eventually yielded.

One day he was sent to the bank to get a thousand dollars. Instead of returning with the money, he turned it over to the tipster and promptly lost it. Blank resorted to his employers and confessed. The brokers decided to retain him in their employ and permit him to pay back the stolen money in small weekly installments, to be taken from his salary.

This plan further reduced the slender income on which the boy and his mother had to live. Actual privation was perhaps

not great, but the young man's worry and anxiety increased. His instability had originally been due to shocks suffered in course of the war. It was heightened by present stresses. The chemical balance of his blood and lymph was more and more gravely disturbed as his excitement progressed. Finally, he arrived at a distinctly pathological condition—walking the floor all night, mumbling and murmuring to himself, rejecting food, remaining away from his work.

At this time the New York newspapers were full of the accounts of successful holdup crimes along Broadway and in other parts of the city. The young man learned from the newspapers that bandits had calmly walked into shops, restaurants and factories, seized large sums of money and got away without trouble. Naturally, the concept of imitating them and thus relieving his own economic situation formed in his disordered mind.

One morning, after having walked the floor all night and refused food at breakfast time, he wandered aimlessly out of the house and down the street. In front of a garage he picked up a piece of pipe, which he hid under his coat. Presently he passed a pawn-broker's shop, where he saw jewelry and a number of Liberty Bonds displayed in the window. The idea that he might rob this place came to him and he entered the shop. At that moment the telephone rang and the solitary broker went to the rear to answer it, turning his back to the boy.

Blank slipped toward the unsuspecting lender, struck him a heavy blow over the head with the pipe and felled him.

But now, instead of carrying out his original intention, the youth exhibited the characteristic faults of the emotionally defective. He dropped his pipe, quaked and trembled with released excitement, and ran into the street. He made no attempt to seize the bonds or jewels. He was easily captured and taken to jail. When his case came up for hearing, the judge referred this prisoner to the clinic for examination.

The carbohydrate tolerance test showed a high pathological curve and the oxygen consumption was also much too high. Placed on gland substance treatment the young man soon gave normal reactions to fresh tests, recovered from his emotionalism and was shortly paroled by the court. His subsequent record shows that he has been completely restored to normality and usefulness. Under other auspices he would have gone to prison, learned the criminal trade and added one to the vast army of the destroyers.

A case of a different special character may also be worth considering.

Giuseppi D. is a young South Italian, brought to this country in his infancy. This boy belongs to the adolescent criminal group, being at present fifteen years old. The boy is intellectually sound and was formerly bright enough to make seven terms in the grade schools in the time allotted for four. His teachers spoke of him as being exceptionally promising.

At the age of fourteen, however, a change came over him. At this time his father and mother were both ill, family finances were at a low ebb and the boy suffered from privation but more from depression and precocious worry. He became upset emotionally, paid no attention to school or studies and his teachers found him sadly changed. He began to play truant and to steal. When caught at one of his misdemeanors he announced that he wanted to go to prison for life and repeated that the idea of stealing and running away had come into his mind suddenly and that he felt it would come again.

This boy attended thrilling motion pictures three or four times a week and some of his damaging concepts were undoubtedly got from these harmful and dangerous exhibitions. Giuseppi stole money with which he bought a cowboy suit and dressed himself up as one of the characters in a movie he had witnessed. He ran away from home in this garb, went to a cheap hotel and registered as a well-known motion picture actor.

The degree to which this boy is disturbed may be judged

from the photograph, (Plate 18), which shows his body streaked with long welts and blotches produced by running the finger strongly over his skin and snapping with the thumb nail. This condition indicates a serious vasomotor disturbance. Laboratory investigation revealed that the boy was suffering from overactivity of the thyroid, suprarenal and pituitary glands. The threshold in the emotion center was greatly depressed and he was therefore without power to resist the emotional waves connected with the evil concepts with which his mind was filled.

This case also responded to careful treatment with gland substances, sedatives and the like, and the retesting, done about three months after the original examination, revealed an almost complete absence of the original symptoms. At the end of eight months the boy had regained his earlier composure, his ability to concentrate on mental work and his scholastic standing. He has shown no further inclination to steal or to become violent with his parents as formerly and the chances are heavily in favor of the permanent relief of this young victim of disease from the terrors of a criminal and perhaps a bloody life.

The layman, who always finds difficulty in associating the word emotional with callous and pitiless criminals, who have no more regard for human life than for the subtleties of æsthetics, is asked to recall once more that the term is here used in the special and technical sense and that emotional disease perhaps manifests itself as often in shortage or lack as in excess of feeling. It is also well to recall, once more, that abnormalities in the hormone mixture act selectively on various neuron groups, sensitizing some and desensitizing others.

Thus we have in the bandit and gangster, who kills often quite casually so far as surface indications show, a special type of emotional defective, whose intricate pathology has not yet been fully explored. Men of this class and disposition are now generally referred to as belonging to the interstitial-suprarenal group, which is to say that these glands appear to dominate their personalities and behavior. These are the glands that



PLATE 18

make for aggressiveness and strong physical activity. They are the glands of that idol of modern mediocrity, the go-getter, and it is not beyond the truth to say that this kind of criminal is usually no more than a go-getter gone wrong.

The fault may lie in either of two directions or rest on a mixture of both. Exaggerated activity of the interstitial and suprarenal glands results in excessive aggressiveness, disregard of others, extreme egocentricity and lack of social responsiveness. Again, this overpresence of the hormones of these two vital glands may be and often is accompanied by a sub-normal functioning of the thyroid, the gland which contributes to the personality of men and women the phenomena of sensitiveness, fine feeling, altruistic responsiveness, gentleness and timidity. This is, of course, not a complete diagnosis of the bandit-gangster's case but it serves to indicate sufficiently his chemical makeup. He is a man suffering from a pluriglandular disease in which the sex and suprarenal glands are the worst of offenders.

Naturally, such a man, if he comes from the slums and the poor foreign quarter, or has been exposed to evil associates and experiences, has taken into the caverns of his brain many dangerous and violent concepts and he acts upon them from necessity. This man, for all his savagery and ferocity and for all the impulse to vengeful and cruel retaliation he excites in the rest of mankind, is as much the plaything of uncontrollable natural forces as the maniac, and another generation will so regard him.

An involved and engrossing case of such defectiveness, which has come under direct and precise scrutiny, may be cited:

Arnold Anderson.—The name and perhaps the crime of this young man will be familiar to newspaper readers through the pathetic events marking his trial and subsequent rescue from the electric chair. He is the second of the five children of a highly respectable Brooklyn tailor, both parents being of Scandinavian birth, the first generation in this country. Mother

and father are apparently normal and all the other children are not only not of criminal inclination but of better than average standing. The eldest sister is respectably married and the mother of normal offspring. Two of the younger children are graduates of universities and persons of some accomplishment. The family situation, though never highly prosperous, has apparently always been modestly comfortable, so that no element of poverty or privation intrudes. Careful inquiry developed that both example and precept in the family have been, from any ordinary standpoint, unexceptionable. The father has always been hardworking and devoted to his family. The mother apparently had almost no interests outside her home and did for her children all that lay within her power and knowledge. The home atmosphere was religious but not excessively so. In other words, we have here a criminal out of a good average American home, where the palpable evidences of hereditary taint or environmental fault are entirely absent. Yet the second of five children became a professional criminal and eventually a murderer.

This child began to exhibit morbidity in its second year, proving morose and peevish. As soon as Arnold was old enough to associate with other children, he showed a marked inclination to solitariness and such peculiarities as made him unpopular with playmates, his brothers and sisters not excepted. Soon after his fourth birthday, his mother tearfully confessed, she was no longer able to take the child to the shops in the neighborhood with her because he would "steal everything." This was more than the usual childish habit of taking sweets and other trifles. She was never able to send him on errands for this reason and because she could not trust him to come back. In his very early years the child formed the habit of staying away from home, hiding out, returning at irregular hours and apparently disregarding all discipline. A few years later he stayed out all night and soon thereafter ran away from home and remained several days, while his distracted

parents sought him through the neighborhood. It turned out he had been associating with older street arabs. He was then only 9 years old.

The parents noted that these peculiarities were manifest only at special and irregular times. There were weeks and months when the boy seemed like other children, did as he was told, exhibited the most marked affection for the members of his family and seemed, if anything, a little too remorseful over previous misconduct. But these interludes of penitence and normality were always transient. The parents used every method known to them to correct and help their son. They administered all the usual punishments; they spanked him, locked him up in his room, deprived him of his meals, shamed him before his brother and sisters. They brought in the family doctor on many occasions, to see if he could find some flaw in the boy and devise some method of correction. In other words, they dimly suspected the truth. But the physician—good man though he probably was—knew nothing of such matters and said perhaps the minister could do something with the child. Whereupon Arnold was repeatedly worked up into spasms of religious ecstasy only to relapse at once into old errors.

Arnold was always bright and clever. In school he did excellently in all his studies but only for short periods of time. Then he played truant, had to be corrected and punished and soon showed a kind of defiance. In other words, he was in no sense mentally deficient and the psychological testing done some years later confirmed this evidence of the earlier behavior. He gave a quotient of 106 and in certain directions was exceptionally quick and keen.

It was not long before the institutional history of the boy began. At the age of 10 he was committed to the Truants' School at Jamaica. He emerged and went back to school, only to resume his previous courses. He was again the brilliant student for a few months and then again the truant and *Taugenichts*. He made matters worse by running away from home,

associating with disreputable youths and committing some trifling offenses, including acts of insulting behavior toward his mother. As a result he was brought before the juvenile court in Brooklyn and interrogated by the judge, who recommended that he be taken to Dr. Schlapp at the clinic.

Here the boy was examined and his history taken. Aided by laboratory testing, which was never completed owing to the recalcitrance of the boy, who was then 13 years old, Dr. Schlapp diagnosed a pluriglandular involvement with a supra-renal predominance and an inclination toward homosexuality. Sedatives and gland extracts were prescribed and the parents were told that their son must return to the clinic at regular intervals, to complete his laboratory examination and to permit observation of his progress. He returned a few times, would not take the carbohydrate tolerance tests but, nevertheless, showed considerable progress. His parents reported that he was much better behaved.

After a few visits, covering a period of about two months, the boy wearied of the treatment, refused to take the medicine, threw the pills away and relapsed into his old condition. He wound up by running away from home and going to Boston in company with a stranger. This escapade resulted in his commitment to the House of Refuge.

The development of the criminal tendency now became marked and rapid. Another term in the House of Refuge was followed by the burglary of a small shop, for which Arnold was sentenced to a short term in Sing Sing Prison. He emerged at the end of his retreat and had not been long at liberty when he was again arrested for burglary and sent back, this time for five years.

Shortly after Arnold Anderson had begun to serve this term, a young man of low stripe, with whom Anderson had been associating in the dives and deeps of Brooklyn, was arrested for a holdup committed some months before, while Anderson was still at liberty. From Sing Sing where he had read of the

arrest of his friend, Anderson sent word that he himself had committed the holdup. He announced that he was the criminal and his friend innocent. He was returned to Brooklyn from Sing Sing and an investigation of his statements begun. It was soon tolerably clear that the young man was lying, to save his friend and to satisfy an emotional need of bravado and perverse heroics. At the same time it was found he had become addicted to the use of narcotics.

At this juncture Dr. Schlapp was called by Judge Harry Lewis, then prosecuting attorney. Dr. Schlapp was asked as to the credibility of Arnold Anderson and as to the young criminal's general makeup and tendencies. After saying that no credence was to be placed in statements made by such a young man under the circumstances, conducting as they did to emotional pyrotechnics, Dr. Schlapp earnestly pressed upon the prosecutor and the court these statements: that Arnold Anderson was an emotional criminal of a dangerous type; that his glandular disease was progressive; that it had been observed in adolescence and had meantime grown much more severe; that unless this young man were placed on treatment in detention, where he could be forced to take his medicaments and live according to a prescribed regimen, he would certainly continue to grow more menacing and that sooner or later, in the course of one of his crimes against property he *would commit murder*. Dr. Schlapp also pleaded that some such place of detention be found and said there was a good chance, even at so late a date, of rehabilitating the man. He pleaded against the folly of sending Anderson back to prison, since the boy had already picked up his worst concepts and habits in institutions.

But civilization has not yet reached the stage where provision can be found for such a situation. Arnold Anderson went back to prison and remained there three and one-half years. He was released in April, 1924. The following August he entered the apartment of a Jersey City real estate dealer and, when an attempt was made to detain him, shot and killed the man. He

was captured within a few blocks of the place, brought to trial and convicted, mainly upon the evidence of his own father, who took the stand and recounted a confession his son had privily made. The father testified, with profound feeling, that he considered it his duty to tell the truth, even if the telling destroyed his ruinous son.

The tragic quality of this scene had a broad public appeal and there was a spontaneous movement to save the convicted slayer from the electric chair. Finally, at the request of Mr. Burdette G. Lewis, then commissioner of Institutions and Agencies in New Jersey, several alienists and neurologists,¹ including Dr. Schlapp, examined Anderson in the prison at Trenton. As a result of their findings his sentence was commuted to life imprisonment by Governor Silzer.

Whoever has followed the authors so far cannot fail to be impressed with the striking evidences presented by this case. Here is a young man in whom the damnation of heredity cannot be seen, though there is also no absolute evidence that inheritance played no part. His environment was, likewise, above reproach for it turned out valuable citizens in the cases of his brother and three sisters and it bears all the qualities which our society, at least, has exalted as noble and necessary. Yet the boy showed defects from early life. Time only made them clear and full of terror. Neither punishment nor training nor religion nor institutions nor prisons improved his behavior or held him back one hour from his baleful destination. A doom had been graven upon his brain and glands—probably in his mother's womb—and from that fulfillment he was not deterred. Yet the thing could have been done and it is a grave charge against our folly and social myopia that it was not done.

¹ The other examiners were Dr. A. A. Brill and Dr. Walter Timme, both of New York, and Dr. Henry A. Cotton and Dr. P. B. Mean of Trenton.

CHAPTER IV

MURDER AND DISEASE

"... Gravissimus est morbus qui a capite diffunditur."

—PLINY THE YOUNGER.

It has long been the habit of sophisticated people to remark that all murderers are insane, a pronouncement too broad for accuracy and yet heavily salted with truth. Safer to say that every killer is in some way diseased. This idea has been steadily growing in the minds of the informed and it will not be difficult to demonstrate its validity.

For hundreds of years the legal and the literary worlds have been occupied with the not very difficult game of searching out the homicidal motive. Writers and investigators have gone about it as part of their general preoccupation with the study of man. Legalists, on the other hand, have tried to set up motives as some loose kind of criteria. They have held, first, that to discover the motive is to take a long step toward the goal of proving the guilt of the accused, an idea ordinarily sound enough. Secondly, however, the legal mind has maintained that wherever there is what seems a rational or, perhaps more accurately, a purposive motive there must be a sane and normal mind—healthy enough to be tried and punished, at any rate.

This latter opinion brings to focus one of the gravest errors of current law and penology, for nothing is more certain than that the abnormal, the gravely diseased, the demented, even the raving mad, still act purposively. Their motives often bear all the marks of rational ideation. A man in the last stages

of frothing mania may still commit a crime in response to the ordinary compellants of revenge, jealousy, hate, fear, avarice, love or lust. Every attentive newspaper reader must know that paranoiacs often are able to transact their business, carry on normal social intercourse, conduct legal trials, practice medicine, work in the sciences and create works of art. Are they therefore sane and responsible for crimes committed in their seizures?

What then shall we say of the millions of human beings who are more subtly attacked by nervous and mental disease, those pitiful columns of helpless men marching to perdition, unwarned, unseeing—those hosts to which any one of us may belong to-morrow? Are we to continue to regard them only as froward and felonious wretches, to be treated with black savagery, or are we at last to take some note of them (of ourselves, that is to say) and readjust our dead ideas to the living problem?

The point is that medicine and law—science and frozen custom—have long ago parted company. Where the law stands on the question of homicide responsibility and what are the sources and history of its ideas and pronouncements is a subject too broad to be treated here as a digression, but a brief review will be found elsewhere (Appendix B). Meantime, it is enough to understand that the law proceeds on the prime theory that as many as possible must be regarded as responsible, amenable to punishment and subject to the extreme retaliation of capital punishment. Medicine, wherever it is in the hands of scientists, takes the attitude in extremest opposition, namely, that no man commits or can commit murder—the willful destruction of human life—who is quite normal and hence responsible. The killer, according to this conception, is in all cases either temporarily or permanently deranged and incapable of controlling his act. No normal man, it follows, has ever committed murder.

The case for this interpretation has already been expounded

in the preceding chapters of this work. However, some of the points require restating for emphasis and some fresh matters must be brought to court.

If our civilization is, as seems certain, at the point of accepting new conceptions in this field, as in so many others, the problem of discovering why men kill will, first of all, have to be transferred out of the old brackets into wider ones. Men will have to think of the causes for criminal homicide in terms of pathology, of defect, of determinism, in preference to the old terms of emotion, purpose and free will. Human motive must give way to chemical and physiological motivators, man's volition to the world forces.

It would be a happy circumstance if there could be brought to bear extended laboratory and statistical studies, but such data do not exist. They are, in fact, ungatherable at present. No technique has as yet been perfected by means of which the subtler disturbances in murderous men can infallibly be detected. Neither would such tests be useful at present. Most courts, wardens and other officials are not yet willing to permit examinations and researches to be made among slayers. A campaign of education among our legal and penal authorities will have to bear fruit before the technician can hope to work in this ensanguined field.

However, there are other if not entirely satisfactory methods of approaching the question. Both of these authors have had exceptional opportunities to observe and study the killers who have appeared in New York City and the adjacent communities. One of us has for many years been a psychiatrist and neurologist of wide practice and the head of the chief clinics where criminals of New York have been examined, tested, treated and investigated. The other, as a journalist, lay student of crime and constant writer upon criminal subjects, has gathered data and made investigations and tabulations bearing on the murder problem, covering a period of fifteen years.

Without going into the fruits of these labors in detail, a task which will be attempted in another connection, some general facts may be set down. The studies have shown that all murderers fall into one of four groups: First, those afflicted with obvious insanity—dementia, paranoia, mania, etc.; second, those suffering from mental deficiency, the more or less gravely feeble-minded of all ranks; third, the epileptics; fourth, the emotional defectives, including the group disordered by extrinsic poisons, drugs, etc.

Of the first group it is necessary only to say that the law still inclines to rank as sane nearly every killer who is not a raving maniac or apparent madman. Judges and jurors are, alas, not psychiatrists, much as some of them vaunt themselves in the polite branches of psychology. Prosecutors still prefer verdicts to justice and lawyers still stand stubbornly in the way of measures aimed to reform the absurd "battles of the mental experts," which disgrace our homicide trials. The truth is that very many killers now forced to answer for their lives—many who die on the gibbet—are actually insane and would be so rated by any impartial board of alienists who were permitted to make exhaustive examinations and tests.

The brief interviews in cells and pens which now pass for psychiatric examinations of accused slayers are a disgrace to our culture and the contrary opinions and crass wranglings of physicians employed by the defense and the state are an insult to the profession and to mental science. The day will come when any man accused of a homicide will be examined by an unbiased board of psychiatrists and researchers, who will use all the latest knowledge and apparatus and will render a decision wholly impartial and binding upon the courts. Judges, lawyers, jurors and murderers all will likely combat such a move, but it will be made eventually because decency and public safety will require it.

Comment of the same kind is provoked in the instance of the feeble-minded. Courts are still sending to the noose and the

electric chair numbers of irresponsible deficients. Their officials are inclined to resent the medical study of such unfortunates as interference with judicial prerogatives and, except in the case of the most glaring imbecility, they dislike to pay much attention to subnormal mentality as a factor in judging and sentencing accused or convicted killers. They still look upon the presence of some conceivable motive as a better index to the responsibility and mentality of the prisoner than all the conclusions of learning. Knowledge is always suspect.

Courts are not without their justifications in this matter. So long as the old ideas of punishment for specified offenses and deterrence by terror hold the ground against the broader conceptions of personal and public peril—so long, in other words, as we kill or imprison men to punish them and warn others, instead of locking them away for treatment or permanent detention because they are menaces—judges must take precautions against being imposed on. They naturally suspect that any murderer is likely to feign feeble-mindedness to cheat the gallows. The fact that such impositions are impossible if the medical examiners are competent does not impress the legal mind. Nor is this strange when we note the peculiar conduct of many mental deficients, particularly those of the higher grade, and consider the impressions their actions must make upon the minds of men not trained in the mental and neurological sciences.

Many of the morons, who rank high among the feeble-minded, show strains of cunning and shrewdness in some departments, especially when it comes to defending their own interests and persons. Many of them exhibit a wild bravado, a callousness before the peril of being sentenced to prison for life or to the hands of the executioner. In numerous instances which the newspaper reading public must recall, such feeble-minded gangsters have insulted and defied judges, made scenes in court, attacked their keepers, leaped at witnesses and lawyers and generally displayed their savagery and hardi-

hood. The natural human reflex to such conduct is rage, which expresses itself in hard punishments. Judges and jurors naturally feel that wretches who behave in such contumacious and rebellious a manner are not unfortunate but "bad." Calmer thought, however, must tell us that men who comport themselves so before those in whom their destiny reposes are, indeed, feeble in the head.

Also, it is necessary again to point out that a brain may be deficient in some parts, not necessarily in all. Subnormal criminals are often cunning enough, shrewd in many departments and yet wholly without the power of restraint, the ability to grasp moral values, the mechanism to inhibit from acts against the law and the lives of others. Enough emphasis has already been laid on this fact.

The epileptics and epileptoids offer us types of killers still more interesting and more imperfectly understood by the courts, the public and even by the generally well-read and well-informed minorities.

Epilepsy, which the Greeks called the divine malady, under the impression that it was a special infliction of the gods, while the Romans termed it the great malady or the disease of demons, has still to be fully explored by science. This strange disease has excited the most poignant curiosity in all historic periods and been the subject of continued and intensive study since the dawn of experimental medicine and pathological research. It has afflicted heroes and geniuses in all times and lands, from Hercules, Cæsar and Nero to this day and hour. Its victims have been emperors, conquerors, statesmen, poets, philosophers and the physicians themselves. Yet its mysteries are still not all unveiled and many of its forms cannot be healed at this writing. Nevertheless, in the last few years we have come to a much firmer footing in the matter and some types of the dread *morbis* now yield to protracted and skillful medication.

There are three general kinds of epilepsy. The first group

embraces the secondary epilepsies resulting from lesions in the brain. Usually such injuries involve the cortex, in which case the term cortical epilepsy is used, but the basilar ganglia are also sometimes affected. The Jacksonian epilepsy, whose causative lesions may be more or less accurately localized through the symptoms, is one of the secondary varieties. So is the *epilepsia tarda*, so called because it manifests itself late, usually after the thirtieth year. It apparently rises from inflammations, tumors and other brain lesions occurring in maturity.

The second general group is made up of the toxic epilepsies, so called because they result from intrinsic or extrinsic poisons present in the blood. They may be brought on by long continued overindulgence in alcohol, the habitual use of drugs or result from infectious diseases and focal infections.

There remain the ideopathic epilepsies. These reveal themselves early, commonly between infancy and adolescence, though sometimes making their first appearance as late as the twenty-fifth year. Their causation is not definitely determined but it is probable that they are of glandular origin. In women, for instance, they commonly express themselves in seizures a day or two preceding or in the course of menstruation. Also, they are often observed in cases of Froelich's syndrome, a pluriglandular disease previously discussed. (Book II, Chapter IV.) Again, many epileptics of this type have, in the last few years, been relieved and successfully treated at Post-Graduate Hospital and in private practice, by the administration of gland substances and sedatives. The surprising results of this work also will have to be treated at length elsewhere. The only point to be stressed here is that the success in treating some kinds of epileptics, once considered quite beyond the power of medicine, is another evidence of the possibilities in the "cure" of criminals and of human beings inclined to criminality.

Perhaps it is not necessary to explain that there is the widest possible range in the gravity and the duration of epileptic attacks. Some patients fall in fits or convulsions and

remain for long periods unconscious and helpless. Others do not lose consciousness at all and do not fall but suffer slight tremors, strange mental darkenesses and psychic experiences, confusion, dizziness and the like. Such semi-epileptics, who have only light or rare attacks, are now generally referred to as epileptoids.

Some epileptics, those that have the severe form and suffer the *grand mal* attacks, as well as those who are more lightly afflicted and never sink below the *petit mal*, undergo a strange experience called the psychic equivalent of epilepsy. This is at once the most interesting and the most dangerous condition to which these sufferers are exposed. Whether the victim is subject to the convulsions and protracted helplessness of the *grand mal* or the lesser physical effects of the *petit mal*, there will be times when he will experience all the psychic effects of the disease without the physical symptoms. That is to say, he will get confused, lose control of himself, grow dizzy, lose his memory and commit the strangest acts, including ferocious murders. These attacks are of an amnesic character, for the patient usually has no memory afterwards of events which befell him while under the spell of the psychic equivalent. The dual personality of individuals who have been much studied by psychologists and others, and have made their way into romantic and dramatic literature, are often epileptics in this phase of their disorder. (There are also the so-called hysterical amnesias.)

The actions of such patients have often been observed by the medical staff of the clinic while they were in the waiting room, where they had come to be treated. Seized by their disease, they talked irrationally, began to play leapfrog or climb up the walls, answered questions with complete detachment from themselves and those about them, forgot who they were and where, attacked others or tried to injure themselves.

One of these patients, to cite a tragic-comic case, walked into a rich man's residence in New York one night, declared

that he was a policeman, that he had come to make an investigation and an arrest, behaved and talked like an officer and managed to throw the family into consternation. Just when he was about to cause the maximum mischief something peculiar in his talk roused the suspicions of the family and an officer was summoned from the street. The poor epileptoid was, of course, charged with false impersonation and attempted extortion (which latter was a suspicion, for he had not mentioned money). When it was shown that the man was a diseased unfortunate he was released and returned for treatment. He had no recollection of his act, could not find the house, did not know the name of the family he had alarmed and could not recognize it when it was mentioned. His seizure had come upon him as he was passing the house and he had acted suddenly upon some diseased psychological basis too obscure to discover. Perhaps in his youth he had wanted to be a policeman.

The approach stages of an epileptic attack may furnish the clue to some of the actuations which motivate the conduct of men and women while under the psychic equivalent. Many epileptics exhibit more or less marked premonitory symptoms of the approaching onset. These are not to be confused with the *aura epileptica* or physical rumblings which come on immediately before the attack and usually last only a few seconds, though sometimes longer. What is in mind here are the more distant and protracted warnings. These sometimes take the form of marked differences in the facial expression, distortion of the features, changes in the look of the eyes and the like. More commonly, however, epileptics who experience these preliminary anguishes suffer from great irritability, from changes in disposition or from marked elation. Still more frequently, they are seized by terrible depression and begin to brood over trifling or fancied wrongs, in which condition they are not far from the state of actual delusions.

It is, of course, well known that worry and stress, over-

exertion, fatigue, overstimulation and all manner of physical and mental strains are likely to bring on the epileptic seizures. And here again is suggestive evidence of glandular causation or, at least, glandular influence.

The epileptic himself rarely knows when an attack is coming on until it is too late to forestall it. The psychic equivalent seizes him in the same way, unexpectedly, often without recognizable foreshadowing. The unfortunate diseased man finds himself confused, cut off from his past, from associative memory. Some fearful torment is working in him. Wild ideas seethe in his sick brain. He throws himself under a train, tries to run up the wall, kills his friend, his wife—or his fancied foe.

While under the spell of the psychic equivalent the epileptic does not and cannot commit purposive crimes, for he retains no memory of the normal world. He is at such times, possibly with the rarest exceptions, unable to recognize an enemy or retain any remembrance of prior grievances or resolutions. Therefore, he most commonly offends against strangers. Such sufferers may, indeed they have, become the victims of damning circumstances.

X, who is an epileptic, has some vague reasons for suspecting that his intimate friend, Y, is too attentive to Mrs. X. He has the usual suspicions, darkened somewhat by his abnormal makeup. Thoughts of fury and violence pass through his mind. He has, however, no real design to kill any one. He is not even certain or half convinced that his suspicions are well founded. To ease the burden of worry, he hires a detective and has the pair watched. No results are obtained.

But X, due to the excitement, passes into the psychic equivalent state in the presence of his friend, Y. The latter, not realizing the danger of arousing the irritable and depressed kind of epileptic, notes X's strange conduct and asks, "Are you crazy?" In his diseased fury, X picks up a poker and kills Y. At the time he does not know his friend, does not

realize that he is the man suspected. He sees only a stranger who infuriates him.

X emerges from his seizure and remembers nothing. He sees the body and realizes that he must have done the crime. Perhaps he flees or tries to conceal the body. He is caught. He protests that he remembers nothing, not an act, not a word. He had no motive for murder. No one believes him. Did he not hire a detective? Was he not jealous? He goes to the gallows, but there was no murder done for there can have been no connected premeditation.

Again, there are the crimes committed by epileptics in the approach stages of their attacks, commonly just before the seizures.

While epileptic attacks generally come on suddenly, there are cases, by no means rare, in which there are protracted preliminary disturbances. As already noted, some sufferers are morbidly depressed or pathologically irritable at such times. They are then just as dangerous as others in the psychic equivalent stage. Their emotions are in the greatest turmoil. They suffer from irrational fears, dreads, hatreds and desires. Strange ideas, sometimes almost equivalent to delusions and notions of persecution, crowd their fevered brains.

Men and women in this condition may yield to a general and long standing irritation against a known person or to sudden rage against a stranger, a close friend, a loved one. It frequently happens that an epileptic of this kind in this stage of his illness will use the knife, the pistol or the poison cup against some one who stands in the way, some one who thwarts or seems to thwart the sick man in some deep desire. The fact is that these individuals are at such times actuated by a purposive motive. that they exhibit what actually is deliberation.

Indeed, such killings are always in a sense premeditated. But here a telling difference must be pointed out. Who of us has not, in some fleeting moment of passion, at least, desired

the death of the enemy or let the idea of killing him run through the mind? Who has not thought of ways and means for disposing of the hated rival, the implacable foe, the person whose existence is the millwheel about the neck, the cause and symbol of frustration? But how few ever kill!

The point is that the sufferer from epilepsy carries these hatreds, desires, thoughts, over into his approach state. If he were normal he would be inhibited from carrying out his criminal plan by the usual forces of fear, of repulsion, of instinctive horror. But his brain mechanism is now out of gear, his emotional machine is without brakes. He has lost the power of controlling his acts. The intellectual centers (see Book III, Chapter II) are not able to restrain the waves of feeling and he does his deed of blood. When he emerges from his seizures he may have no memory of the thing he has done.

Yet many a helpless and irresponsible sufferer from this affliction has been boiled in pitch, burned at the stake or strangled and left hanging beside the highway to feed the buzzards and to remind men of the quality of mercy and the quantity of ignorance.

One of the most pathetic cases of this kind to achieve wide celebrity in the United States was the execution a few years ago of the Rev. Clarence V. T. Richeson at Charlestown Prison, near Boston. This unhappy Baptist clergyman had been intimate with a young choir singer, Avis Linnell, whom he seems to have loved and planned to marry. The chance to wed an heiress, lift himself out of poverty and become a personage in his denomination led the minister's fancy into a new direction and he tried to discard the singer. But she reported to him that she was pregnant and he, under the guise of giving her an abortive, caused her to seat herself in her bathtub and swallow a capsule of potassium cyanide. He confessed his crime and wanted to plead guilty but the state demanded a trial and the death penalty.

The facts as to the man were exceptionally plain and elo-

quent. He had been subject to epileptic seizures since childhood and had suffered repeatedly in early manhood from the characteristic convulsions. How late these *grand mal* attacks had persisted is not known with certainty but the peculiarities of behavior incident to the *petit mal* were with him to the time of his disgrace. He had always acted strangely, stolen, engaged in rash affairs with women members of his congregation, been unable to complete his studies and otherwise exhibited the marks of the defective constitution. His convulsions had always seized him at periods when he was intensely excited, crossed in love, worried or harassed by others—a fact which is indicative, of course, and seems to argue the endocrine nature of epilepsy or, at least, a control of the seizures by the bodily chemicals.

He suffered repeated epileptic seizures in jail and prison, in the course of one of which he emasculated himself with the jagged cover of a tin can. When the governor of Massachusetts at last refused him mercy, Richeson was seized with convulsions and lay rigid and unconscious for fourteen hours. When he roused from his seizure he was dragged out like a sack of meal, thrown into the electric chair and shocked to death. Since medievalism there has, surely, been no more terrible story.

The appalling details of some of the murders committed by epileptics alone mark them as the work of diseased beings. A case from the records of Post-Graduate Hospital will serve as an example.

E. G.—This was a Russian-Jewish woman of forty who suffered frequent epileptic attacks followed by long enduring spells of depression and morbid fears. She suspected, with an invalid's instinct, that her husband "was glad I had these attacks because it gives him an excuse to be away." She told the examining physicians at Post-Graduate that her mother-in-law wanted her to die so that her son (the husband) might make another and better marriage. She was jealous of the

husband and said that he liked to be in the company of "young ladies" and stayed out late at night. These suspicions had grown to the dimensions and extravagances of delusions, for they embraced a private physician who had been treating her.

. She was being treated with indifferent results when arrested for the murder of her husband. He had been slain in the night with an ax, his head being almost severed as the result of repeated furious blows. The wife naturally tried to explain and excuse herself, finally asserting that her husband had come home at two o'clock and got the ax when she reproved him. In the struggle for the tool, she said, it fell and cut him! She was sent, after examination by an official board, to the State Hospital at Matteawan, N. Y., where she remains.

This horrible crime shows all the evidence of diseased fury, of a degenerate mental condition. Most probably it was committed in the depressed post-seizure condition, when the woman's fears and delusions oppressed her most. Her memory proved, under examination, to be extraordinarily defective, so that she certainly had no clear and accurate recollection of her crime, even though she had not the complete memory loss incident to the actual seizure. Her delusions were undoubtedly of epileptic origin and her whole history shows a case of brain disease. Yet her crime shows better evidence of premeditation and connected motivation than do the offenses of epileptics less palpably morbid.

The important point is that the epileptoids, the sufferers from the psychic equivalent of epilepsy, are quite as helpless and irresponsible when their illness is upon them. For seconds, minutes or hours—sometimes for long periods—they lose all touch with themselves, all control over their actions and all memory of life. After they emerge from under the cloud, they resume where they left off when they were seized, recalling nothing of the dark interval. In such conditions they are quite as likely to kill as to play leap frog or try to run up

the walls. The unhappy man who played policeman might just as readily have committed murder if his trends had run in that direction. If he had been harassed and frustrated by some individual, the ordinary mild resentment of health might have become deadly frenzy in his seizure. His other self might have done murder. He, the man of restraint and meekness in all his unclouded hours, might have had to pay with his life for the demoniac act committed under the lash of his strange distemper.

Shall we continue to punish such wrecks and strays or shall we expend our energies finding a way to treat them, to salvage them and to protect ourselves—detaining them if we cannot cure them, not out of wrath but out of humanity and necessity?

There remains the still more complex, interesting and numerous group of killers, the emotional defectives. Here again we encounter the gross and obvious cases, the intermediate conditions and the situations so subtle, involved and contradictory that the layman is not to be blamed if he is confused and skeptical.

The reader must be asked again to distinguish between the literary and technical meanings of the word emotion. He must be reminded once more that the emotionally diseased may be under- as well as over-emotioned, lacking in feeling or having too much of that faculty. He must also be requested to recall that the endocrine chemicals and all sorts of toxins, *intrinsic* or *extrinsic*, act selectively on the various cell groups and brain centers. Thus it happens that a man suffering from forms of gland disbalance which affect the emotional area of the brain will give normal reactions in some centers, supernormal or excessive reactions in others and subnormal or inadequate responses in the rest. More on this subject has already been expounded in attempting to explain the gland types. (Book II, Chapter I; and elsewhere.)

Every reader will recall minor imperative actions out of his own experience. There is the boy who can not pass a

picket fence without touching each of the uprights as he walks along, the little girl who goes hippity-hop along the stone-flagged sidewalk to avoid stepping on any of the cracks. There is the person who must talk aloud to himself as he walks along the street and only desists when some strong sense of being ridiculed impinges on the brain. There are those who must whistle, who must hum or sing to themselves in public places, who frown, scowl or laugh outright in the streets, who suddenly begin to run for no good reason. And who has not seen the men and women who are socially impossible because of strange outbursts, pathological egotism, frankness or rudeness and other extraordinary bits of behavior before others? Such individuals know the usages as well as we, but they cannot control themselves.

A little more strongly marked are the pathological liars. They know that they lie and that they will be caught, but they go on yarning, fabulating, spinning whoppers. The healthy man will lie and must lie because he does not wish his secrets invaded or because to tell the truth would be to injure himself or others. The pathological liar has no such reason for his or her flights. Yet the lying is purposive. It is done to attract attention, to satisfy the ego. The self-accusers, so familiar to the police in connection with every dramatic criminal case, have no motive but to attract attention, to be admired, talked about, to see their names and pictures in the newspapers, perhaps. They know that they will be exposed and humiliated in the end, that they may be roughly treated or charged by the police whom they annoy and thwart, that they will brand themselves as "not all there." Yet they go ahead, because they cannot resist. They have no control. Their concepts are bad, to be sure. They have false ideas and false values in their minds, but so have millions of others who do not indulge in such acts.

All these unhappy people are suffering from more or less mild and subtle forms of nervous disorder. The cells in some

special parts of the nervous system are too irritable, too readily responsive. The thresholds in these centers are lowered and thus the person acts on impulse, the usual inhibitory forces being unable to hold them in check.

Such disturbances are not, by any means, all mild and comparatively harmless, like the instances cited. They ascend in social gravity as the gravity of the disease rises. There are the phobiacs, for instance—men and women who have strange, half-mad fears. They cannot go into the subway, ride in a motor car, stay in certain rooms, endure the presence of a pet. The old explanation was that they had once been hurt in the subway, terribly frightened in a motor accident, locked into the feared room or bitten by a dog. True enough. But thousands of others have suffered these injuries and frights without acquiring phobias. The fact is, of course, that those who suffer from such sick fears are individuals afflicted with gland disorders and with consequent nervous disease. The moment the concept of the old fear or peril is awakened they fly into spasms of dread, rush away or fall helpless in paroxysms. They do not want to act thus madly. They cannot help themselves. Again, they are swept away by strong impulses in the emotional centers and they have no control of their ensuing acts.

When we go to the extreme of the line we find the murderer and the sadist. The latter is a man suffering from a grave and deep emotional disturbance who acts on some diseased concept. He is sexually abnormal, which accounts for the pathological pleasure he derives from the pain, blood and death of others. No intelligent person has any notion that such sick monsters are responsible for their acts or able to control themselves. If men of this stamp are occasionally sentenced to death it is out of response to popular horror and clamor. Except where the motive of political preferment for judges and prosecutors intervenes they do not usually go to the gibbet but to asylums or to prisons—though they belong

in neither but in some kind of reconstitution hospital not yet provided by our culture.

Many of the better equipped now admit and understand such gross kinds of nervous and psychic disturbance which cannot be ranked as insanity and must yet be accorded the mantle of irresponsibility. But when it comes to granting that less strikingly diseased men and women may be emotionally disturbed or diseased to the point of no self-control, no inhibition against murderous acts, these same enlightened ones stop short and want to retreat. Yet the facts are comparatively simple.

John Jones is an ill-tempered, passionate man, subject to quick and fearful rages. His wife, for whom he has a deep affection, crosses him at some unlucky moment when he is most tense, when the cells in his anger-emotional center are most responsive. Before he can stop to consider, to control himself, John Jones has caught up a handy weapon and struck his wife a deadly blow over the head. When he sees her lying there, cooling and accusing, he suddenly recovers his balance. Fear and horror and regret bring him back to a kind of dreadful calm or to collapse. Every one understands what has happened and no one thinks of sending Jones to the rope or the chair. His crime was not premeditated.

But if the same Jones suffers from a somewhat more complicated and less familiar type of disorder and commits his homicide in what appears to be a more deliberate manner, no one wants to hear any defense of him and the plea that he may be quite as definitely irresponsible and unable to control himself is greeted with anger or derision. Let us say that Jones is suspicious of his wife, that he is afflicted with a mad and unreasoning jealousy. Such circumstances are common enough and they show on their face the presence of glandular and nervous unhealth. Jones tries, time after time, to catch his wife with her imaginary paramour. He procures a revolver with which to face the interloper. Perhaps he plans to kill his rival, in itself a morbid symptom. More likely he

"PASSIONAL CRIMES"

wants to be assured of the advantage in case the man proves the stronger.

Jones makes several attempts to trap the man and fails. Each failure, instead of reassuring him, only adds to his inner turmoil, his seething emotionalism. He believes nothing. Favorable evidence only distorts itself into worse suspicions in his diseased brain. Finally, failing to catch the rival who does not exist, he confronts his innocent wife, who replies angrily or is sullen and silent. Jones's long gathering fury bursts the banks and he kills the woman. He goes to his execution almost infallibly. Yet the pathetic truth is that he is a sicker and less responsible man than the other Jones of the flaring and sudden deadly rage.

This last instance is, it need hardly be added, not a piece of imagination but an actual case. But more important is the fact that these circumstances with only minor variations of detail underlie a very large number of murders committed every year. They are one type of the great and popular division of homicides which the French call *crimes passionels*. This term, somewhat awkwardly translated as *passional crimes* or *crimes of passion*, describes a group of killings which display diseased emotionalism in the most striking way. They are always featured by the presence of an amorous or sexual motive, perhaps more accurately, sexual excitation complicated by resistances.

Any examination of such homicides will reveal the most diverse psychological and often physiological elements at work, all the uncountable complexities, subtleties, varieties and disorders of eroticism; all the deeps of perversion, of homosexuality, of mismating, of general neurotic stress. Perhaps the commonest type shows not love but erotic frustration as the compelling factor.

Homicides of this character have become extraordinarily numerous in the United States in this generation, quite in keeping with the swelling tide of emotionalism and nervous

disorders among our people. The most arresting feature of this rise in love crimes is to be found in the appalling number of killings by women. No one familiar with the history of murder or with general realistic literature needs to be told that the killing of the spouse or paramour was formerly a crime typical of the man. To-day, on the other hand, any study and computation would certainly reveal that women are now almost as common killers as men. For this change there are obvious and yet deep-lying causes.

We come again upon feminism and its allied evil, industrialism. The general participation of women in the economic struggle has caused a widespread emotional disordering of the female organism, a common predisposition to hysteria and nervous explosiveness. The restlessness of women, their baneful pushing into activities for which they are biologically not suited and the resultant rise in the numbers of congenital defectives are all fruits of this upas tree.

The preachings and other activities of various disturbed leaders, the neurotic sisterhood that still haunts the legislative halls demanding an equality which nature long ago denied, have led women everywhere to fill their minds with concepts and attitudes of aggressiveness, with lust for personal domination and with bitter resentments against the unchangeable physical and social advantages of men—with little thought of the many and serious advantages of women. One of the curious results of this "aspiration" of women has been the strange fruit of the single-moral-standard hocus pocus. To the ironic bewilderment of the purists, whose infatuated blather has filled the air of the country for all of a hundred years, the morals of men have not been elevated to any visible degree, while the morality and continence of women have undergone a general decay. All this has had its effect upon homicide and it may be read in the tables.

Moral decline, concepts of aggressiveness, sick egoism, false masculinism and contempt for authority form a highly danger-

ous mixture to let flow in the processes of emotionally disturbed women. They cause crimes and we ought not to be surprised when they do.

What happens in the case of the average woman who kills a man with whom she is or has been amorously engaged is almost too clear to need repetitious pointing. Frustration in any one of many directions leads to a boiling of the endocrines, a general sensitization of the cells in various neuron groups, a lowering of the threshold of functional activity in various emotional centers, a loss of inhibitory power and deeds of blood. The sentimental attitude toward the woman killer, and the supineness of juries set to try women of even the least sexual allure, undoubtedly weakens the concept of fear in the minds of women and thus further lowers the power of inhibition. This is, however, a wholly secondary consideration.

Men as well as women suffer from emotional distresses incident to erotic misadventures, to be sure. And they, too, are the victims of the blind blunders of creation and the remorseless stresses of what we call civilization. To judge or to punish either is to be guided by one of the inherited misconceptions. To understand and prevent such outbursts and to ameliorate the conditions under which all must live is to act in accordance with science and enlightenment.

A typical case of the emotional love crime came under study a few years ago:

Frank X.—This extraordinary young man is an American-born Jew of the first native generation. The parents are apparently normal and neither father nor mother could remember any case of insanity or invalidism in the respective families. The mother was somewhat disturbed during the gestation of the boy, owing to poverty and other stresses, but was not ill and did not clearly remember that she was disturbed, but did recall crying a good deal. The evidences of emotional derangement are thus suggestive rather than clear.

The boy was always bright, almost precocious. He did well

at school but was inclined to be fanciful and lack concentration. He was affectionate and showed strong feeling under any circumstances that might arouse emotion; was poetic and extravagant. No clear signs of special derangement at puberty were recalled by the relatives or by the young man himself. In his late teens, after high school graduation, he went to work in an office. He made a creditable showing but was always more or less given to imperative actions, sudden whistling or laughing, apparently unmotivated minor acts of all kinds, gusts of feeling over trivial annoyances or flushes of sorrowful emotion, sometimes verging on tears.

In his early twenties this young man fell in love with a school teacher. She, too, was Jewish, her parents having been immigrants about twenty years before. The girl returned the young man's affection and a most ecstatic love affair ensued. But one night the girl's father, an orthodox Jew, discovered that his daughter's suitor was modern, no better than a Goy or Gentile. On this ground he forbade the young man the house. There is the statement in some of the court proceedings and other records that the girl's father was extremely vain of his daughter's education and had planned for her a much more ambitious match. He had selected the man, much older but also much more substantial than the poor clerk. There is, however, no doubt that the ancient conflict between orthodoxy and heterodoxy played its part.

These are, to be sure, most stale ingredients of tragedy, but fact has no concern with critical attitudes. Triteness and banality are, whatever the horror of the artist, the principal stuffs of life.

X. and his sweetheart continued to meet in spite of the parental forbidding until they were again discovered. The girl's father, threatening and pronouncing the curse, dragged his daughter from the tiny apartment of the young man's mother and thereafter watched his girl so carefully that trysts became impossible.

WHAT FRUSTRATION CAN DO

Frustrances in young and passionate love are not lightly borne, even by the stolid. In this excitable boy the situation produced an excess activity of the glands that sent his self-control further and further from the reach of inhibitory brakes. He grew so distracted and languid that he lost his job. He hung disconsolately about the flat and sat for hours by the window watching a corner of the park, where he could catch a distant glimpse of the girl as she went home from school. If she was delayed his excitement mounted to hysteria, and if she happened to go home by some other route he nearly collapsed. At night he walked the floor. By day he could hardly bring himself to eat. All this and what follows come from the records of the official inquiries and examinations.

His mother drove him from the flat, to seek work. Money was not free with them and perhaps the distraction would help him. He might get his mind off the girl for a few hours. So he went out time after time, got into the subway and started downtown, but when he reached Forty-second Street he could go no further. He got out and took the next train back. Day after day he tried it, but as soon as he reached the great Rialto cross street some invisible but prepotent hand, some incontestable magnetism, drew him back to the little corner of the park in the Bronx where his fate was fixed.

We understand, to be sure, what was going on. The ever-mounting disease of the glands was subjecting the cells in the nervous system to an ever more unendurable irritation, so that their delicate colloids became more and more readily explosive with each day. The boy could no longer control himself. He could not do what he wanted. He could not even go where he set out for. (Surely one asks no clearer instance of the chemical control of acts.) One day the young man felt that he could not further bear the pressure and denial. From a pawnbroker he bought a revolver, going to some complications of subterfuge to get it. He got a mirror, set it up in the little front room from which he had watched for the

girl at the park corner so many days, and posed with the weapon. The voices of children coming home drew his attention away. She would be leaving the school very soon. He must see her once more. He crammed the revolver into his coat pocket and ran out of the house.

On a street corner, a few squares away, they met. He tried not to tremble. She was nervous and shy. After a few stuttered sentences she drew him into a soda shop to have a drink. They talked there in low tones, but there were too many eyes and he wanted to be alone with her, so he led her back into the street. She walked a few steps, looking right and left and then behind her.

"What's the matter?" he asked.

"Let's go into the park," she said fearfully. "We might be seen."

The thought that she was afraid, that she was thinking only of her own safety when he was at the point of suicide fired his already disordered mind. He began to tremble violently. His features must have become distorted, for he saw her turn toward him and stare in fright. He heard her call:

"Frank! What's the matter?"

What happened next he never knew quite clearly. He told varying and discrepant stories, not, as the police supposed, because he was trying to lie and excuse himself, but because his brain was fogged, his memory faint, his whole series of impressions incoherent. As a matter of fact, when he saw what he had done he declined to be tried and asked to be put to death as soon as possible, so that he might "join her."

Witnesses, however, reported that they had seen him take out the revolver and turn it on the girl, pulling the trigger till it was empty. As she reeled and fell he straightened up with a tremor, the pistol fell from his grasp and he threw himself upon the fallen girl, sobbing and clutching her to him. The police finally pulled him away.

Officially this was calmly premeditated murder and it was

only by a fortunate conspiracy of circumstances that X. escaped the electric chair. Medically it was something quite different.

The sub-emotional killer has always been even harder to make comprehensible to the layman in terms of disease. We see the cold-blooded gangster who can shoot down his foe for the most trifling cause or butcher a stranger for a few dollars. We observe the icy monster who can feed his burdensome sweetheart morphine or cyanide and lull her into swallowing the dose with kisses and feigned tenderness. We are appalled at the man or woman who can calmly slaughter a whole family or a succession of innocents, to collect some trifles of life insurance. Are these creatures of terror to be excused on the ground of diseased emotionalism? Why, they have no feelings at all, these inhuman wretches! Nor are they feeble-minded, for they exhibit the utmost adroitness in committing and concealing their crimes and they reveal themselves as cunning and shrewd on the witness stand or before the inquisitors of the state. And they can weep and plead and show emotion enough when their own necks are in danger.

Nevertheless, these strange creatures who have in all times moved mankind to the fiercest anger and deepest repulsion, are defective, diseased, warped and not responsible. They are, like the others, mentally and nervously deformed—wormy apples from the life tree.

The gangster and habitual killer is frequently a drug addict and drugs raise or lower the thresholds in the brain cells as already explained. Even more are mentally deficient. Still others suffer from types of emotional disturbance which affect some of the centers of feeling and not others, so that we have the man who will weep at the plight of the Cyprian in the melodrama and go forth within the hour to murder his mother. The pitiless poisoner will always, if the laboratory and psychological tests are carefully applied and the other medical examinations thoroughly made, exhibit the symptoms of subtle

disease. And the monster who slays tens and scores out of childish greed is too obvious a defective to need much illumination, except to officials, who still insist on treating such patients with the sharp medicine and sure cure of the ax, the guillotine, the rope and the chair.

Whether it is worth while preserving the lives of such creatures is one question; whether it becomes civilized peoples to dispatch them out of vengeance and retaliation quite another. The time seems close at hand when such of them as can be normalized will be put into the hands of competent physicians in hospitals, where they will be prisoners of policy, not of revenge. Those who cannot be redeemed will remain in prison or be killed by the most humane method, for the safety of society, not for the satisfaction of a savage instinct.

CHAPTER V

PROGRAM

"... this brake Cimmerian

Through which we grope, and from whose thorns we ache,
While still we scan

Round our frail faltering progress for some path or plan."

—THOMAS HARDY.

THERE is the modern fable of the householder whose plumbing developed a leak. Summoning his servants, he dispatched them for pots and pans to catch the water. When these were filled he sent for tubs and barrels and when his servants fell exhausted he hired others. He had seen his father and his grandfather catching the water from leaks and commanding the servants to save the rugs and furniture. Accordingly, he reasoned, that was the correct, infallible and unchangeable way of dealing with such annoyances. He grew angry when some one suggested a plumber and at last was drowned in his own obstinacy.

This absurd gentleman is, of course, the modern state and the leak is criminality.

To judge from the bustle and the roar, western nations are awake to the menace. At the time of writing, the first weeks of 1927, the pamphlets, articles, studies, reports and books are fairly raining from the presses in America and all western Europe. The criminological and penological literature put into type in the last three years probably exceeds in bulk the output of the previous thirty. Crime commissions, legislative committees, deputations of lawyers, judges, charitables, sociologists, police officials and who not? are meeting, deliberating, making speeches, attending dinners and issuing voluminous reports, plans, pronouncements and recommendations. Learned and pliant gentlemen occupying easy chairs at some of our

best backwoods and freshwater colleges are uttering volumes and tomes freighted with conclusions.

The pity of it is that all these laborings and strainings are, with notable exceptions, as arid as Gobi and as empty as the moon. Most of the publications are amateurish and vacant cheers for the present system, the efficient police, the excellent laws and the upright judges, with some slight recommendations of legal or administrative changes, always toward further severity, deeper reaction. Others are studies of patently grotesque data and "official" statistics. Still others, armchair labors of college psychologists and sociologists, by all odds the most perilous brood of childish dabblers and servile dilettantes at large in the world.

The nature of the leak or the need of an efficient plumber occurs to none of them.

The general tone of the works issued may be judged by an extract from a deeply serious, dignified and costly work, issued at the end of mountainous labors and endorsed by eminent gentlemen. After devoting vast reaches of space to arid considerations of stale laws, meaningless police figures and recommendations of a little juridical and judicial patchwork, this work ¹ dismisses the real problem no further along than page 11 of the introduction with this succulent paragraph:

"The causes of crime were not studied because they are still entangled in unsettled questions concerning *economics, education, sociology, ethics, and religion*. (Sic! And the italics are ours.) The existence of personal responsibility was taken *somewhat for granted*, although as the reports show, especially the one on medical relations, that we were not unaware of causes beyond the control of the individual."

This is rather a conservative sample of the scores and hundreds of similar works now being circulated. The worst of them want the death penalty extended to stealers of thread and lollypops, the best still nourish the broken illusion that disease, brain damage, madness, epilepsy, perversion, emo-

¹ "The Missouri Crime Survey."

tional defect and all the thousand deep wounds of mankind can be healed by an alternation of savagery and sentimentalism, a little paltry social service and a few sermons. As soon as this foul twaddle is thrown upon the dustheap and its vapid prattlers pushed back into their inevitable obscurity it will be possible to make some progress. With them must go the numerous and pretentious publications of the so-called conservative doctors, together with their eminent authors, mere babblers and dealers in hollow words and dull multiplications of half-understood cases. No doubt it will be a long time before this happy conclusion can be reached and further generations will have to sweat and bleed before genuine advances can be accomplished.

There are many and potent reasons why any proposal radically to change our method of dealing with crime and criminals must meet with stubborn opposition. The present ideas are very old, very deep-rooted and armored with the defensive strength of all blind conservatism. Worse, to overturn them would be to curtail the power and reduce the importance and income of lawyers and a whole swarm of intrenched officials. Any profound change would imperil political profits and prerequisites, so that the hostility of those in power is to be understood. Again, there is the instinctive faith in force and fear that the groundling never can quite give up. It is part of his human as of his divine religion. There is the fear-driven, savage vindictiveness of the human animal which falls to a kind of mass sadism where the innovator or the custom breaker is concerned. Finally, the very classes which suffer most from the brutalities of the punitive system of justice, the halt and the lowly, may be depended on for the ultimate stubbornness. There is the human need for looking down, the desperate want of feeling something below. The base must have still more pitiful depths upon which to brood with a leer of pathetic superiority. The lowest of our Sudras want most to feel the Chandala under their feet.

Nevertheless, changes will come as they have always come because the pressure of old evils must with time become too great. The number of criminals, of wasters, of idlers, of cranks, of halfwits, idiots, madmen, emotional defectives—of undesirables and weaklings of all kinds—which already is tremendous, will and must, unless radical remedies are used forthwith, become so great as to overwhelm the world. The cost of supporting dependents will at no distant day rise too high for the resources of the sound. The number of workers withdrawn from basic or necessary production to attend to the misfit or the enemies of society, to protect us from the evil children of our culture, must within a few generations become too formidable for the earning power of the productive remnant. To-day already, in the United States, to every ten workers gainfully occupied there is one public employee or public charge. This proportion is steadily rising and the day is not far off when every average family will be supporting an official or a dependent.

Such forces are irresistible. They bring deep and great changes, surely, inevitably. With this in view it may not be out of place to suggest some of the directions that ought to be and probably must be followed. It is to be remarked at the outset that no limited measures, no patching here and there, no compromising with dead methods will do the work. The program that will in time relieve society of its overwhelming burden and the menace to its life is a vast and costly one. We cannot expect to get rid of the piled-up refuse of some thousands of years for a pittance or with a bath spray.

The start will undoubtedly have to be made with our legal and penal methods.

INDETERMINATE SENTENCE

Thoughtful criminologists have long advocated a complete system of indeterminate sentences; not the farcical institution

now in more or less general use but one based on rational principles of social defense. Instead of making the punishment fit the crime, which is still the general practice, or leaving the termination of a span in prison to be decided by a judge or parole board or regulated by the prison conduct of the convict, the whole matter to be considered to-morrow will be the safety of society and the question of a prisoner's release will be left entirely in the hands of technicians able to predict, with reasonable accuracy, his future behavior.

Under such a system the trial judge would, in nearly all cases, have no discretion and the laws of the state would provide no definite terms or limitations according to the offense committed. A prisoner upon being found guilty of a crime or being shown to be dangerous to his neighbors would simply be sentenced to detention, no date of release being fixed. He would then go to a central institution where he could be observed and his social, mental and physiological status determined by scientific methods. This work having been done, he would be sent immediately to a branch institution where men of his type were being treated or detained.

A NEW PRISON CONCEPTION

It will be seen that no abolition of prisons, that dream of fools, is contemplated. On the other hand, radical changes will have to be made and in the end all existing penal houses will be done away with and others on a very different plan substituted. This, again, will not be done for humanitarian or sentimental reasons or out of any abhorrence of imprisonment but for reasons of social efficiency.

A CENTRAL DETENTION HOSPITAL

The heart of the new plan should be, in every state or every large community, a receiving institution which must be in the

practical sense a prison, in which the most refractory elements can be held when necessary, but in reality and ultimate purpose a great detention hospital. Here would go men, convicted or suspected, of all grades and classes, to be tested, examined, investigated by social, laboratory and clinic methods, given their preliminary or experimental treatments and finally classified. They would be rated not according to their crimes but according to their defects, diseases, deficiencies and the like.

The classified men would then be sent out to smaller institutions where special facilities existed for the handling of just such patients. Hopeless deficients would be sent to farms and works where they might be permanently detained and made to perform such labors as are within their capacities. Epileptics would go to other institutions specially prepared to administer the most advanced treatments and modernly equipped for the safe detention of such unfortunates. Less marked forms of feeble-mindedness would be handled at still other branch institutions in charge of the best procurable medical experts, whose whole effort would be devoted to the improvement of their charges—always in the hope of rendering them useful, safe and releasable citizens.

RESEARCH LABORATORIES

In each of the central receiving institutions there must be established well-equipped research laboratories in charge of the most eminent specialists living, where deeper investigations into the causes and treatment of human misbehavior and behavioristic diseases can be carried on with ample funds, facilities and unremitting zeal. Other laboratories should be maintained at all the branch institutions where prisoners are detained for longer periods, in order that the most accurate data may be compiled and constant experimental treatments devised and administered.

THE NEED OF RESEARCH

In this way and in this way only will it be possible within a relatively short time to get at the profound causes of much delinquency and criminality that is now but vaguely understood or guessed at. Further investigations into the activities of the brain, the nerves and the glands fairly cry out to be made. More tests to reveal the normal or abnormal functioning of glands and other important organs must be discovered or devised.

There can be little doubt that such a system would yield, in a single decade, more concrete results than science, for all its efforts, its devotion, the genius of its individual workers and its high spirit, has been able to make in this direction within two generations. We need to organize our research, to centralize our efforts at points where the human material is available and to place the superintendence into the hands of men who have the solution of the criminal problem at heart and no other interests to serve. By this method we can do for human research what the great laboratories of the electrical and steel corporations have done for invention and research in various technological branches.

One single year's saving on the national crime bill will pay for the whole equipment, salaries, materials and all other expenditures.

TRUE SEGREGATION

Since the days of John Howard, penologists have understood the importance of segregation, understood according to their own bents and the gloom of their times. No one needs to argue now that it is well to keep young and still forming criminals out of the reach of hardened rogues, if only because mankind everywhere learns much more readily through imitation and emulation than through rote or precept. One hour's contact with an admired notoriety will shape more evil than ten years of punishment, sermons, tracts and beatings can

correct. Prisons as we have them to-day were planned and built with such facts in view. Accordingly, we had the so-called Pennsylvania or European system of solitary confinement and the Auburn system of single cells—complete segregation at night and free association during the day, under guard and originally in strict silence. Both these prison plans have failed to accomplish their object, failed so completely that no informed man now questions that jails and prisons are the seminaries and universities of criminality.

Yet segregation is correct in theory, necessary and workable. The trouble in the past has risen out of various factors. Solitary confinement drove men frantic and had to be abandoned. Perpetual silence was almost as bad and futile in the end, because the convicts invariably perfected methods of secret communication, thereby preserving all the evil of gregariousness and none of the good. It, too, has been done away with after generations of stupid brutalities. Again, the prisons have been more or less constantly overcrowded, so that two or more men or women frequently occupied small cells together. Unnatural sexuality, other forms of vice, plotting, and all the other evils which segregation hoped to overcome naturally flourished. Finally, prison officials up to this writing have never had either the knowledge or the facilities for scientific segregation, and here is the deepest fault of all. It is useless to throw all first offenders together, for some are green and pliant boys and others are already as deep-dyed in villainy as the last recidivist. It is equally vain to set men in prisons apart according to age groupings, types of offenses, religion, physical condition or any of the standards usually urged. Nor can any man, unless he is a highly trained and deeply experienced psychiatric, neurological and psychological specialist, make proper decisions as to the class to which any given convict ought to be assigned. Even such a man needs for the precise performance of his task an equipment nowhere provided at present.

A SOCIAL LABORATORY

The central detention hospitals, if placed in the hands of the foremost available technicians and properly supported, will fill this need. Here the medical examinations will show, with the lowest possible chance of error, the true grade, class and condition of each prisoner, so that scientific grading and segregating can be done. This work must be supported by a social laboratory and investigating bureau through which the history and background of each patient may be traced, analyzed and compared with the medical findings. In a short time such central hospitals would have in their archives personal and medical histories in vast numbers and it would then be possible to classify all returning offenders by the simple card index system, always backed and checked, of course, by re-examinations.

Thus it will be possible to select prisoners who may safely be associated in their prisons or detaining institutions and given the same general treatment, work, schooling and preparation for ultimate release.

PRISONS OUTMODED

Scientific segregation and treatment for criminality cannot, it seems almost needless to say, be worked in prisons as at present constructed, regulated and administered. An entirely new prison scheme will in time have to replace the vast machinery of punitive justice now in use. Some prisons will no doubt have to be walled for the retention of the fractious and incorrigible. Others will be farms or villages. The great cell house containing hundreds of cubbies or cages will be the first to go. Its place will be taken by small cottages or dormitories housing probably not more than fifteen or twenty patients or, if we must persist in the word, prisoners. Each cottage must be in charge of a specially trained head, who will be at once general nurse, leader, teacher and guard. Groups of such cottages will be in charge of a specially trained

and selected expert as superintendent. He will be a physician, of course, and one who has majored in the branches pertaining to his special work. He will have under him an expert in vocational training and education, again specially fitted for the particular work necessary to the group in hand.

This system will and must, of course, be highly flexible and what is written about it here is to be regarded merely as suggestive. The structural, architectural, medical, vocational, educational, industrial and detentional features of each institution will have to be worked out through experiment and practice, by the old method of trial and error. Intelligence and honesty will go a long way toward providing reasonably successful and efficient plans from the outset, however.

Under this system large communities such as the more populous of our states and any of the greater nations would maintain separate institutions for each distinct group of sufferers. The mental deficient, for instance, might be detained in one centralized institution or in several scattered places. The hopelessly afflicted ought, it seems obvious, to be strictly detached from those expected to recover or improve.

Each general institution would then segregate special types of patients in one or more of the cottages or dormitories. The epileptics, for instance, would have their special division, in charge of a man capable of treating this disease, to make investigations and experiments and to train the patients. Such sufferers would again undoubtedly be segregated according to the gravity of their affliction, the more mild and hopeful cases under one roof and master, the grave cases under another.

It is not possible in a summary of this kind to set forth a detailed plan of segregation standards. There is no space for such speculation and there are no reliable data on which to proceed. These points will have to be worked out. Meantime, it is enough to indicate that all imprisoned men would be classified according to their diagnoses and prognoses, social

THE CAUSES OF PAST FAILURES

and personal historical factors being always considered. Each general group would have its general detaining institution and each sub-group its special cottages and specialized treatment.

TREATMENT AND TRAINING

We have already seen that the successful medical treatment of many types of offenders, especially in their younger years, is now an accomplished fact. We need only to consider that the laboratories and other research facilities of the criminological system here suggested would in a very short time provide the means of healing still other types of offenders and aberrants. The dream is, of course, that time and intelligence will one day solve almost the entire problem and permit the rehabilitation of the overwhelming majority of all our strays and outcasts.

That being so, the chief accent in the prisons of to-morrow will and must be laid upon the matter of medication including, of course, surgical aid, dentistry and other branches of the healing art. That is to say, the first work will be the physical (including mental) reconditioning of all convicts or other patients who can be helped. After that has been done and while it is being accomplished the sufferers can also be trained for the business of facing life.

Just here we come upon a matter that will explain many of our past failures. The environmentalists and social theorists have in the last two generations spent colossal sums of money and vast amounts of laudable effort in attempts to correct the young, to salvage the delinquent and to reform the criminal by means of schooling, precept, vocational training, special education and some ten thousand other modes of procedure, all centering about the general idea that human beings can be fundamentally changed by instruction of one sort or another. These efforts have done some good in milder cases and in a limited number of instances. On the whole, however, they

have failed miserably. The reason is, of course, that nearly all the strays of the world are so definitely diseased that nothing can be done through teaching until the defects and disorders have been corrected medically. In brief, it is impossible to make a disordered mechanism do its work properly and respond normally until it has been repaired. This is obvious enough in the case of an automobile or a typewriter but we still hesitate to apply the same simple rule to the human machine.

As soon as we prepare and operate proper shops for the reconditioning of our personal mechanisms we shall be able to apply the various theories of training with genuine effect. Such instruction and life-preparation will be the secondary course in all detentional institutions of to-morrow.

COMPULSORY TREATMENT

One of the most stubborn obstacles in the path of criminological and correctional science is the inability to administer regular, uninterrupted, supervised and protracted treatment. For that matter, this is one of the greatest problems of medicine everywhere, but it bears upon the disorders conducive to anti-social conduct with peculiar force.

Mental deficiency, mental defectiveness, glandular disorders, nervous troubles of all sorts, epilepsy, emotional instability and the related troubles all require careful and long extended treatments. Even in cases where the disease can be corrected by the simple administration of gland extracts and sedatives it is imperative that the medicine be taken at regular intervals, without omissions, sometimes for years on end, often throughout life. If the patient forgets his medicine ever and again, he retards his recovery or negatives the whole value of the work.

Experience at the clinics and in private practice has shown that even the most intelligent patients are negligent in these

A NEW ATTITUDE

matters while the low-witted and the recalcitrant are hardly to be handled at all. Even the better disposed and more nearly normal have the human habit of stopping treatment as soon as they feel a little improved. Thus, even in these cases it is essential that the sufferer from troubles which may be socially dangerous shall be confined, nursed, supervised and made to take the treatments regularly without a single slip or interruption. This can only be done under circumstances where the sufferer, whether he has been convicted as a criminal or confined as a potential offender, may be legally forced to follow the instructions of his physicians and nurses.

In many other cases, where surgical attention, electrical applications, therapeutic baths, special exercise and even more complicated administrations are needed, the detention and compulsion features are all the more essential. No real progress can be made without them. Therefore, a benevolent imprisonment system must probably always be used, even for the control of many types of offenders who need not be locked away for safety.

On this fact a great change in our attitude toward prisoner and prisons may be based, for once it is understood that men are detained to be medicated rather than to be punished or to be kept away from their endangered brethren, much of the odium will fall away from the imprisoned men and the problem of his later social placing be greatly simplified.

RELEASE OF PRISONERS

The evils of the present system of releases from penal houses need no more than a reminder. Let the enthusiasts and official approvers say what they like, we have not done an effective work against recidivism and the proportion of reformations is probably as low as ever it was. At any rate, the progress made has been so slight as to discourage most stu-

dents. Worse yet, under our present system, we are devoting an incalculable amount of money and energy to playing a stupid game of tag with dangerous and destructive criminals. Our police and courts spend the greater part of their time dealing with old offenders who, under any efficient system, should never trouble us more than once or twice. Worst of all, relatively harmless and reclaimable offenders are now frequently sent to the gallows or electric chair, or are sentenced to very long terms, even to life imprisonment, because the kind of crime they happened to commit was especially reprehended at the time, because some upright judge chose to capitalize temporary hysteria, or because influential interests had caused legislatures to attach disproportionate penalties to certain offenses. On the other hand, the most dangerous and persistent groups of organized thieves, the worst plunderers, the politically entrenched gangster guilty of a score of killings and the underworld chieftain who corrupts whole communities, all get off with short terms or are quickly paroled through influence or propagandized sentiment. What scandals and corruptions these things have occasioned every one knows.

The underlying trouble is that we persist in measuring out punishments in accordance with the silly ideas of the retaliative system instead of proceeding intelligently to protect the state and its people. The remedy is a simple and direct one. Every convicted offender should be sent to an institution suited to his needs. No date should be fixed for his release. Every effort should now be made to correct the defects in his nature and to make him fit for his freedom. As soon as he is recovered he must be given his liberty.

The first question to be asked here has to deal with the problem of recovery and fitness for release. Such matters must obviously be removed as far as possible from politics and spoils. The foremost medical specialists must be procured to constitute releasing boards, and the most eminent practitioners

in other branches must be made to coöperate. The procedure under advanced conditions ought probably to be approximately as follows:

On original commitment the physician in charge of the central detention or receiving hospital will make a diagnosis, estimating, among other things, the time needed for treatment. At the expiration of that period the man automatically must be reëxamined and his fitness for freedom passed upon. Meantime, however, should he evince evidences of recovery, he or his nurse or the head of the branch institution in which he may be detained may request his earlier reëxamination and release. A system of supervised releases, such as is already in use in some places, will have to be employed.

Until a diseased offender shows sufficient recovery or normalization to be, in the opinion of the best procurable technicians, safe for freedom, he cannot, under the projected system, be released. By this method dangerous men slow to yield to treatment would automatically remain confined for long terms and others requiring minor adjustment be freed in a few weeks or months. Some would, indeed, never be set free again and they would ultimately be transferred to a special institution where, with others of their kind, they might conclude their lives as comfortably and usefully as possible. In extreme cases of violence or suffering a merciful euthanasia might be employed, were the social ideas of the public so far advanced.

Nothing would actuate the state except the interest and safety of its citizens. Even the innocence of a prisoner, if subsequently established, would not in all cases set him free, particularly if he were demonstrably guilty of other and earlier offenses and shown to be diseased and likely to commit further crimes. The old game of catch the fox would be entirely abandoned and an ideal of social security and racial improvement substituted for the ancient and stupid if sometimes amusing tricks of lawyers and sharpers.

SAFEGUARDS

No one pretends that this is a perfect system, that it has not its flaws and dangers or that it will work smoothly and satisfactorily at first flight. It is to be presupposed that, by the time such a plan can be installed throughout, civilization will have reached a slightly higher elevation and science made important advances, so that both men and their knowledge will be a little more dependable than at the hour of writing. Deep alterations in human nature are not to be expected until still more drastic and far-reaching steps are taken, however. Thus it will be necessary to surround the proposed system with various safeguards. They need hardly be remarked and they cannot be satisfactorily enumerated, since conditions and events will develop them out of the coil and moil of slow evolution and social change.

No doubt it will be necessary to place other technicians, intelligent laymen and, perhaps, popular figures on the controlling boards. In the first place it must be observed that the problem is not exclusively, though largely, a medical one. Other sciences will have to contribute their share to the general work and they must be represented in the control. Again, it will no doubt be wise to avoid a medical priesthood and hierarchy, since the physician, even at his sublime best, is not much more free than other men from prepossessions, errors, selfishness and blundering. Human checks must surround human beings under all circumstances, especially since the danger of a medical tyranny is almost as great as the present evil of a legalistic and bureaucratic oligarchy.

PAROLE

To make it possible to release men at the first safe stage of their recovery, thus reducing the burden of taxation, the proposed system will employ an elaborate paroling scheme. Men set free from detaining institutions will probably be re-

RECOMMITMENT UPON RELAPSE

quired to report at stated intervals for at least five years, so that their conduct may be observed, a record kept of their condition and circumstances and reëxaminations made when required. Many of these men will need post-hospital treatments for long periods, to prevent relapse or to continue their improvement. Many of the gland cases will have to be kept on their administrations of hormone substances throughout their subsequent lives and it will be an important duty of the new state to see that these things are done.

Individuals showing signs of relapse or further development of disorders and diseases will be automatically returned to institutions of treatment suitable to their then present situations. Those who reveal steady progress over the five-year parole period will be completely discharged at the end of that time and this will be the sole method of final freedom from supervision. There being no death penalty and no punitive sentences under the new system, the power of judicial pardon will automatically be done away with. Clemency will rise from a sentimental beneficence or a purchased privilege to a social policy on the part of the state and the people.

The ideal will be to do as much as lies within human power for every imprisoned human being and to set him free as soon as he seems likely to be a safe and useful member of society, thus serving the interest of the individual and the state to the maximum.

FEAR AND DETERRENCE

These authors would be the last to doubt or deny that fear has, upon the normal or nearly normal human mechanism, the effect of deterring from forbidden, which is to say perilous, actions. And it requires neither special insight nor erudition in biology and anthropology to understand that healthy animals and healthy men do not prefer courses and actions almost certain to destroy them. On the other hand, desperations

and emotional stresses drive both brutes and men to expose themselves to danger otherwise avoided. Under such situations their inhibitory mechanisms are no longer able to cope with their positive impulses and they do what is normally irrational. The world happens to be full of human creatures who are constantly in the condition of the normal man under tremendous stress and of others too dull to comprehend their danger—to reckon the consequences of acts. These will not and cannot be deterred by the most terrible penalties. Imprisonment, hanging, electrocution, disembowelment, all the horrors which the diseased imagination of the centuries has been able to devise, have signally failed to restrain such men from criminal courses. Turn again to the histories. Every page makes it clear that fear and terrorism are useless against these.

Their more or less normal brothers, on the other hand, will probably be better off if penalties and disadvantages still accrue to the lot of evildoers. Will this deterrent effect be greater or less under the proposed system?

We make bold to believe that it will be greater. If the habitual or intellectual criminal is at all swayed by the risks he runs, if he can in any measure be restrained by the specter of what is likely to befall him, the prospect of protracted detention, which may amount to life imprisonment, of subjection to medical and perhaps surgical measures and the certainty that he can no longer play tag with the courts and 'possum with the parole boards or governors, will be a more effective check than our present loud growls, ferocious frowns and weak performance. We proceed here on the perhaps questionable assumption that the new system will be more honestly and impartially administered than the present. It can, of course, be no worse in these respects and it has within it inherent virtues and safeguards which sway us toward hope.

It might be well to add to the body of regulations under the new system a provision for the confiscation of all property of

CRUELTY IN PRISONS

thieves, grafters, spoilsmen and other such offenders of special groupings. This would carry the deterrent mechanism as far as appears feasible.

CODDLING

One of the favorite methods of defending one's corrupt privileges or perquisites against social advances or reforms is to incite the prejudices of the ignorant. Accordingly, there is not a moron in the land but is venomously against a vague something whose name he has read in the inferior newspapers—coddling. The just test of sincerity for these empty-heads and for the editorial scribblers who guide them, would be to offer all such worthies the privilege of just the degree of coddling provided or proposed for criminals. Or let one of them fall afoul of the law, personally or through some relative or close connection. What wholehearted conversion to humanity follows and with what prodigious speed.

Whoever has had any close contact with prisons and prisoners knows that coddling is the term of the cocksure ignoramus. One may be as cold to sentimental bosh and as impervious to pity as a rhinoceros and yet not escape the purely matter-of-fact knowledge that every prison wall is the shelter of numberless and in many cases unavoidable barbarities. It is worth noting that those who resent an occasional motion picture show or sloppy holiday dinner for convicts, wailing loudly that there are honest men outside with no such comforts, show no haste to change their states with the prisoners. There is no waiting line at Sing Sing.

The more intelligent judges, wardens and other penal officials have discovered that even felons are not without humanity and rather fuller of weakness than other men. They have noted that more can be accomplished for the general good by attempting to understand and help the prisoner than by brutalizing him. If this is coddling then the proper way to correct a child is to knock it senseless.

JUDGES AND JURIES

One of the commonest objections to any changes in the directions suggested is that they will practically destroy the safeguards resting in the powers of judges and juries. The answer is that judges will still interpret the law and juries will still decide the questions of guilt and innocence. However, neither judge nor jury will, under the proposed scheme, have any voice in the subsequent treatment of the convicted man.

As to judges, is it necessary to remark that these worthy and often deeply earnest men are usually most sadly schooled in the humanities, very little informed in matters outside the law and notoriously ignorant of the sciences? This is no indictment against them, for doctors and writers are commonly as darkly deficient in matters of law. Every man to his craft. But are human conduct and human misconduct matters of law or problems of medicine and humanism? The modern notion, at least, is in favor of the second conception and the proof is not recondite. If a man's conduct becomes strange, his nervous control deserts him or his normal efficiency becomes impaired he goes to his physician in the hope of correcting the fault. And if he finds himself in a tangle of circumstance or a snarl of destiny he appeals to his friend, his spiritual leader or to some humane mediator. He avoids lawyers and judges until he is dragged into their hands for he understands the nature of their treatments.

The jury system is more and more clearly an anachronism. It developed out of the Anglo-Norman royal tax inquisition system and similar institutions on the continent and soon succeeded such superstitious institutions as trial by ordeal or by battle, in which God was expected to turn the scales in favor of the innocent but usually nodded at the crucial moment. The first juries² were not impartial triers but witnesses having knowl-

² Pollock and Maitland, "History of English Law," and Forsyth, "History of Trial by Jury."

JURY AN ANACHRONISM

edge of the facts and called together to render a decision of good or evil. Only much later were jurors selected from among men having no knowledge of the facts at issue or of the persons contending or accused. And it seems a quite modern conceit to confine jury service to men having, indeed, no knowledge of anything.

Thus an institution founded to help the alien Norman kings collect taxes in England has been developed under democracy into what the blithering orator calls a bulwark of human liberty. Under the legalistic conceptions of guilt and punishment juries were and are important, though their blunders are notorious and the unfitness of ignorant rustics to try questions involving recondite problems of ethics, medicine, psychiatry and the other abstruse sciences grins at us from every fresh legal battle.

Under the newer and sterner conceptions outlined, the guilt or innocence of a defendant in any special instance will be of diminishing importance. The main question, after all, is not whether Jones or Smith stole a few dollars from Brown or broke into the shed of Green, but whether these men are likely to continue such practices, to burden society with their watching or to pass on to worse and more dangerous offenses. Judges are not fitted to decide such matters and juries far less. Even the sciences will have to make some further strides before they can accurately determine these matters in all or nearly all cases. To-day no greater claim can be made than that medicine makes a vastly better score in this department than ever has been hung up by the law.

THE MASTER KEY

But, when all this far-reaching change has been accomplished, when the world has been reëducated and the concept of retaliation driven out of countenance, little true progress will have been made unless an even vaster program of preven-

tive criminology shall have been put into practice. We shall in time be able to heal a great number of criminals, to rehabilitate enormous numbers of derelicts and wasters, to reduce the enemy population to a small part of its present prodigious array, but we shall never be able to get at the root of the trouble except through a far-seeing medico-social prophylaxis.

Prevention is the master key, the great remedy.

Surely this is not news, for a thousand pages bristle with the pronouncement and scores of preventive schemes have been and are being tried. We need but look at the millions expended in social work, in slum cleansing, on playgrounds for city children, on night schools, vocational training institutions, childhood centers, on how many hundreds of varied efforts all designed to salvage disadvantaged youth from the deeps. It is no fault of earnestness if these vast works have not been able to handle the problem, if the good they have accomplished has hardly made a visible impression upon the rising mountain of criminality and misfortune. The noblest strivers for human betterment have until now had no proper tools with which to attack and no correct understanding of the obstacle before them.

SICK YOUTH

Children come into the world, as we have seen, not criminal but handicapped and doomed to disaster. The overwhelming majority of these unfortunates can be definitely changed, healed, made normal and so rescued from their ruinous destination. This statement must be repeated and emphasized with all possible earnestness, with vehemence, with passion. A large part of all the children who make up the world's worst enemies can at this writing be so definitely helped that they will never be worse than inferior beings. Many can be developed into first-rate members of society and numbers of warped geniuses among them can be so stabilized as to turn their talents to useful and high pursuits. Many others will be healed through

THE TREATMENT OF CHILDREN

further medical discoveries or, some day, practically excluded from birth.

This is the great preventive work to be accomplished by to-morrow's civilization—the treatment in their earliest years of these misbegotten children. Once normalize them and crime will torment us but little.

In almost all cases the more serious diseases and defects of humanity manifest themselves in infancy or in the first years of life. The trouble is that the signs and portents are not recognized by parents and are even meaningless to a great number of physicians. What passes for petulance, ill-temper, solitariness, and unimportant peculiarity in infants is usually the symptom of disorders having tremendous consequences to the individual and to society. Many a child that weeps and howls too much, that wets the bed, that is disobedient, that is too thin or too fat, that is dull or complaining or weak actually suffers from nervous and glandular derangements that result tragically in later life. (Consult earlier chapters and illustrations.)

The terrifying fact is that such troubles must be treated very early. It is too late to begin when the sick child has become a delinquent adolescent, much too late when it has grown into a criminal adult. The decisive work must be done at once, as soon after birth as the slightest variations are to be observed.

NEW EQUIPMENT

Before this great problem can be mastered our world must have new and different equipments. We shall need, to be sure, more free hospitals where the children who need treatment can get it at the hands of competent physicians. We need hospitals in which such children can be detained, against the wills of their parents if need be, and made to take the necessary treatments regularly and for long periods. We shall need laws, eventually, to compel the registration and periodic ex-

amination of all children, high born or low born, to see whether they suffer from any of the troubles which are potential of social perils.

Until such equipment can be provided and such changes made in the laws, we need a great campaign of general education. Parents, charitables, social workers, probationers, judges, policemen and the medical men themselves need to be trained to recognize the symptoms of dangerous abnormality in children. Parents and guardians need especially to be made familiar with the beneficent, painless and constructive nature of this work and persuaded to make sure of the condition and prospects of children, instead of carelessly letting things slide or hoping that Johnny will outgrow his faults. Such things are outgrown only in the direction of catastrophe.

In this field, again, there is crying need of laboratories and research bureaus. Much is already known but more is to be discovered, more treatments developed, more tests and remedies devised.

If steps are taken in the indicated direction the falling off in the number of criminals, delinquents, wasters, deficientes, defectives, dependents and the socially unfit generally ought to be one-half in a single generation. Let the economists calculate for you what that would save.

EUGENICS AND STERILIZATION

For all the complaints of the romantic and the scoffing of the foolish, some Spartan race will again arise intelligent and restrained enough to apply the simple principles of genetics to human affairs. The notion that every useful creation, from corn to cattle and horses, may be improved by selective breeding, but not man, is one of the basest of human superstitions, somehow entangled with drooling mysticism and anthropocentricity. Man is not different from other growing products of nature and it is too absurd to have to plead again that his

THE MYTH REGARDING GENIUS

breed may be improved and the unfit weeded out by permitting reproduction only among those who are healthy and of good intelligence.

The wails to the effect that many a genius would be denied the doubtful boon of life if this were done is, to be sure, mere newspaper column twaddle, the chatter of childish sciolists. Fine flowers grow upon fine stems not upon sickly ones, and fine human beings come from superior parents, not from defectives and cripples. The human mechanism is somewhat more complex than others, the qualities to be sought in human breeding are somewhat more various and complicated, but the means by which desired results, needed improvements can be got, remain one and the same. Why all this agonized faith in razorback humanity?

Nor need there be any pain or disadvantage to the unfit in a properly conceived eugenic program. Sterilization may now be effectively accomplished without excision and without shortening the life or seriously disturbing the comfort of the unfortunates who ought not to be encouraged in the further mispopulation of the world. Nor is there any reason why the sacred flame of love should be dimmed because men and women may be required to mate sensibly. The world is no longer in its childhood.

Indeed, the roar that has gone up against human genetic selection comes not from scholars or scientists, nor yet from poets or lovers, but from leaders of creeds, races and other disturbing divisions of humanity who wish to gain numeral advantage at whatever cost. It is remarkable that these protestants usually represent the inferior stocks and strata.

REGIMENTATION OF RASCALS

In all civilizations, once they have reached their prosperous prime, there is a tendency to develop large numbers of individuals no longer willing to work at productive or basically

useful pursuits. The complexity and extravagance of ripe civilizations breeds these borderline individuals by the thousands. They congregate in the cities, where they are employed only in occupations which contribute and pander to the luxury fever and pleasure madness of the time. If they produce at all it is only such articles or services as are wholly useless and only consumed by the spending crust of the social structure.

The lower ranks of this class do not produce or labor at all, save in most fitful manner. They live by battenning on the evils of the culture to which they attach themselves like saprophytes. Here we have those many thousands of city idlers, wasters, misfits, inverters and troublemakers to be seen in all great cities. Any New York chief of police, once free of political necessity and drive, would round up fifty thousand of them in the course of a few afternoons. They conceal themselves under the guise of minor thespians, waiters, pugilists, camp-followers of various athletic luminaries, trainers, chauffeurs, what not? In reality they work but little even at the most dubious of their professed employments. Their real income is derived, when not from forthright crime, from gambling, pandering, prostitution, mulcting women, blackmail, making book, touting, handling bets, peddling drugs, pederasty and other infamies.

Many of these individuals—and there are women of this class as numerous as the men—never come before criminal courts or are sent to penal houses, yet they are at all times potential criminals. There is no reason for the frothing fury against them often uttered by preachers and other moralizers, troublesome and costly as they certainly are. These people are, for all their occasionally ferine or abysmal behavior, a great group of unfortunates. They are the unstable part of the population, subtly but surely diseased, children of the age, victims of the *Zeitgeist*.

To understand them is to be able to deal with them in more

THE NEED FOR MEDICATION

humane and effective ways. All such undesirables and malefactors need to be registered, treated in detention places and, when released, kept afar from the scenes of their misadventures. Perhaps no better method of handling them for the immediate future can be devised than a forced draft or regimentation system by which these disturbers would be held under control of the state, employed in public construction and other government works and forced to contribute something useful to society instead of being permitted to drain it. Such creatures of the male sex have often in the past been handled by being forced into the armies of well-controlled states and many still seek voluntarily this quasi-exile from the strains of ordinary life. Accordingly, the kind of arrangement suggested would not be a dangerous departure from tried methods.

Such a system, unless it is backed by medical treatment of the maladjusted thousands thus set apart, will fail to get at the sources of the trouble or reduce the number of such undesirables. Punishment or segregation normalizes no one.

A CENTRAL RECORD BUREAU

To make our entire scheme of dealing with criminals and less marked malefactors effective it will be necessary to establish a great central bureau of record and information. Such proposals have often been made in the past for police records, especially those having to do with the identification of known offenders. Bureaus of this kind are already operating in Europe, especially in Germany, with triumphant results. The institution projected is, however, of much greater latitude than any now in existence, for it would include not only police and penal records. These would, indeed, be of minor and declining importance. Medical, social, clinical, laboratorial and personal-historical records of all who came under the care of the state and its agencies anywhere in the nation, and ultimately in the

civilized world, would be kept here, to be exchanged, forwarded to cities and institutions where needed and studied by students and scientists. The ultimate benefits of such a bureau, first to society and then to general science, can hardly be overstated.

At such a proposal there will, of course, be the usual cry against encroachment of personal liberties and the peril of bureaucratic tyranny. These are bugaboos, for personal liberty certainly does not include the right to be delinquent or criminal; neither is there any reason why public servants cannot be intelligent and honest. We need merely to change the method of choosing, paying and maintaining our officials.

FALSE IDEALS

Behind and beyond all this great scheme there lies, to be sure, a vaster problem—the correction of false ideas and ideals. The economist school has called attention to one of the basic troubles, social injustice. It is true, the Socialists and their offshoots have been guilty of wild exaggeration, blunders as to the workings of forces and childish worship of the impossible ideal of equality, yet there is a good deal in some of their assertions. There can be no doubt that social injustice leads to resentment, stress, inhibition and eventually to nervous ferment, gland derangement and instability among the ill-treated masses of men. We have already noted the grave effects of poverty and unsuitable labor upon mothers. It is necessary also to realize that men as well as women are disordered by stresses and strains, by worries and privations, by overwork, by undernourishment, by lack of leisure and opportunity, by need of self-expression and, particularly, by the grind and speed of the industrial age.

The neurologist and student of the nervous or pathological causes of anti-social behavior and social unrest cannot pass from this topic without warning his contemporaries again of

THE EXALTATION OF THE UNFIT

Samuel Butler's dread of the machine. Efficiency systems, forced labor, high speed production and all the rest of the modern industrial gospel may make for large profits and quick wealth, even for immediate prosperity of the workers, but they will ruin the health of our people and add staggering amounts to our tax burden. The price is too high. There must be a halt.

DEMOCRACY

One of the most destructive concepts held in the general mind is the basic preachment of modern democracy—the equality of men. The hollow oratorical declaration that all men are created equal may have served well enough in the movement against the tyranny of debauched kings and profligate nobles, but it has done the more modern world a bad service. Men are neither equal nor free. The mother of all living remains always the tyrant and her creatures are in no broad sense free agents, not for a single instant from birth to death. Nor are any two men ever actually equal and the ideal of making all human creatures equally responsible, burdening them with the same loads or blessing them with the same privileges is a grotesque piece of bosh. Any system of society sincerely working on such principles would perforce limit the individual scope to the capacities of the lowest.

This brummagem ideal did not come to the West with Rousseau, as some recent writers have tried to contend, but was innate in Christianity, a religion for ancient slaves which laid emphasis on a muddled and sick humanitarianism—the sacrifice of the strong and the exaltation of the weak and worthless.

Ironically enough, science and especially medicine have been made to serve this disastrous doctrine in a most grotesque way. Under conditions of nature the weak and unfit have always been weeded out by pestilences, floods, famines, wars, individual combats and the ordinary rigors of living. Civiliza-

tion has done away with or greatly mitigated all these old hygienic factors except war, which seems more devouring than ever and with a satanic irony destroys mostly the strong and useful. We have checked the floods, built against the earthquakes, controlled famines and regulated individual destructiveness—though with no extravagant success in America, if we glance at the homicide charts. Medicine has also brought most pestilences under control, robbed many diseases of their deadliness, enormously reduced mortality among weak infants and somewhat prolonged the average span of life.

Worse yet, with our hospitals, our sanitariums, our whole paternalistic system, we manage to keep alive countless millions of individuals who must under natural conditions have perished in infancy or early life.

Any biologist must assure us that the result has been of a most evil character. We have stopped the upward evolution of the species in its tracks by producing and preserving too many of the lower order, too many defectives and weaklings. It is thus no wonder if we read constantly the scientific opinion that human intelligence and average human capacity have made no progress in modern times—probably not since Periclean Greece.

THE BURDENS OF THE FIT

Worse and more of it, the cost of maintaining the vast armies of the worthless and the dependent must be borne by the strong, with the result of additional strain upon them and the eventual destabilizing and unfitting of a large group that would improve rather than go backwards under less stressful conditions. This point has already been sufficiently emphasized.

The false humanitarianism of our civilization, the preservation of the lowly who drag the mean of our culture and racial capacity far under the desirable norm, unites with the delu-

sion of equality to make superiority and genius almost impossible among us. No individual in any age can rise more than a seemingly fixed distance above the level of his contemporaries. The mass must move with the leaders. Again, under the preachments of democracy as interpreted by our Chandala, there can be no respect for talent, for superiority, for learning, for genius, even for authority. The common lout has had his mind filled with blundering and dangerous concepts. He feels himself, in the words of the precious Celt, as good as any man and a damned sight better. He respects nothing but wealth, the only one of the possessions of the superior he has any chance of attaining. Naturally, he goes about achieving his ends by any means in his power and if he is, as usually happens, a little unstable or defective, crimes and horrors mark his progress.

In spite of the howls of the demos, mankind probably must go back to some sort of caste system founded on productiveness, upon ability, upon service to the state. Some system of reward beyond gain, if some genius can devise it, will probably do the race more good than all the philanthropies, preachments, ethics and scabby ideals.

BACKWARDS?

So far the smug gentlemen who occupy the seats of power and prestige among our people show not the slightest tendency to change their ideas or to examine the ground in any fresh directions. They exhibit on all sides a beautiful faith in everything that has failed in the past. Either a blunder becomes an inspiration after a little lapse of time or an error often enough repeated is transmuted into a moral. At any rate, we see our popular leaders on all sides turning confidently backward to the past.

A learned judge of one of our "supreme" courts returns from a holiday in Europe and declares that the public guillotin-

ings of France and the medieval use of the headsman's ax, employed in some of the German states, would surely check criminality among us. Our legislative bodies continue to grind out more severe laws, precisely paralleling those abandoned two generations ago. A professor of psychology concludes, after proving to his own satisfaction that criminals are no more degraded in mentality than others, that any one who thrice breaks the felony statutes should be put to death "automatically," that juries should be abolished, that the insane, the feeble-minded and the young should be punished equally with others, and more in the same bloodthirsty strain.

Well, perhaps. Still one wonders if it might not be a serviceable idea to include some undergraduate familiarity with philosophy and history among the requirements of judges, legislators and professors.

APPENDICES

APPENDIX A

SOME VICISSITUDES OF FREE WILL

ALL of the later religions have suffered difficulties in attempts to reconcile the concept of human freedom with the proclaimed powers and characters of their deities. As the celestial systems changed from old polytheism to higher pluralism and monotheism the faith in the *mæra* and *nornir* faded and men began to contemplate the proposition that they must be able to choose their actions, since they were punished for having chosen ill. The Karma of Brahminism, an idealization of the fruits of good and evil actions, determines whether reincarnation shall be in a higher or lower form of life. The deserving go higher, the guilty lower. This doctrine was adapted, modified and taken over by Buddhism which teaches, however, that "by few or many steps all shall reach the sunlit heights."

Flavius Josephus, probably reflecting his Greek training, relates that in spite of the libertarian ideas inherent in the Old Testament texts, there were three opinions held among the Jews. The Sadducees believed in complete freedom and responsibility for human actions. The Pharisees more or less straddled the question, believing in fate but recognizing a certain measure of human freedom. The Essenes, on the other hand, were complete fatalists and constantly at war with the others.

Orthodox Moslemism, of course, teaches fatalism or divine governance of all acts, but various Mohammedan sects have made schisms over this question and taught the doctrine of free will or at least the responsibility of man for the character of his conduct.

The Christian churches experienced more protracted and bitterer controversies than any others. From the end of the second century to the beginning of the fifth there was little or no discussion. The Greek fathers, beginning with Origen and ending with Chrysostom, held quietly to the doctrine of freedom, nor does any contrary notion seem to have ruffled their assurance.

This calm was, however, soon dispelled by the historic dispute between St. Augustine and Pelagius. Augustine, the most famous father of the western church, tried in the beginning to solve the puzzle by asserting that God looked upon human actions as contingent and not as determined. Complete freedom, however, had belonged to Adam and that father of the race had lost it to all posterity by his fall. Accordingly, man was corrupt and doomed to evil. Infants who had not been baptized and received into the church were, therefore, damned. There could be no freedom of the will in beings smirched from the days of Eden. Redemption could be attained only through and because of divine grace, which was to be achieved by the intermediacy of the church and its clergy. In short, the good Augustine set up a kind of negative determinism known as predestination, and this doctrine became the very foundation stone of Roman orthodoxy.¹

Before Augustine had formulated all of these pronouncements there had appeared in Rome a wandering theologian whose teachings evoked the most vitriolic of the Augustinian treatises. His Romanized name was Pelagius, which is supposed to have been a translation of the old Cymric *Morgan*, sea-born. He had come either from Scotland or Ireland. Jerome called him a Scot and Augustine referred to him as Brito. This Pelagius, outraged at the loose morals prevalent at Rome and elsewhere in the empire, which he considered incident to the fatalistic view of life and the current doctrine of predestination, began a crusade, with his pupil Cœlestius. They taught that mankind was not damned because of Adam's sin, that infants who died before baptism were received into heaven, that each man born is as incorrupt as was the gardener of Eden and falls into sin only through bad example and temptation, and that the human choice between good and evil is free.

Cœlestius was tried at Carthage in 410 for uttering such heterodox opinions and excommunicated as a heretic. Pelagius, however, con-

¹ Consult "Select Library of the Nicene and post-Nicene Fathers of the Christian Church," Buffalo, 1886, Series 1. The special writings on these questions are: "De peccatorum meritis et remissione et de baptismo parvulorum," "De spiritu et littera," "De natura et gratia" and "De perfectione instituti hominis."

THE PELAGIAN CONTROVERSY

tinued to teach his version of the faith, living a blameless life and setting his followers the example of his Master. But in 415 Crosius, a Spanish priest, warned Jerome of the heresies of Pelagius and the dissenter was cited before John, Bishop of Jerusalem. The prosecution against him failed as did a second case, tried before the Synod at Diospolis later in the same year.

Augustine, thoroughly inflamed at the menace of the Briton's teaching, now asked the aid of Innocent, Bishop of Rome, who decided in favor of his African colleague. Zosimus, who succeeded Innocent, upheld this ruling, after many delays and vexations of the spirit. Eventually, in 418, the Emperor Honorius was prevailed upon to issue an edict of banishment and confiscation against Pelagius, Cœlestius and all their followers. Zosimus followed by asking all Christian bishops to condemn Pelagianism but it was not until 431 that the Eastern church acceded to this request.

For a generation or more, Pelagianism was practically dead but before the end of the fifth century it had come to resurrection in a modified form called semi-Pelagianism. This compromise teaching arose in Africa and Gaul and spread with such alarming rapidity that it was specifically condemned by the councils of Orange and Valence in 529. These more remote followers of the British teacher held that the sovereign grace belonged to God and that human actions emanate from Him, but they insisted on man's responsibility. In other words, they sought a compromise with the Augustinian doctrine and they gained something after all, for the same councils which condemned their ideas restricted the teaching of Augustine's doctrine of predestined evil.²

Pure and compromise Pelagianism were, however, forbidden rather than dead. Their doctrines continued to attract many a monkish intelligence in secret, nor were the outbreaks of outlawed teaching and the administrations of punishment few or far between. The next great controversy did not, however, break out until the first half of the ninth century when the celebrated Gottschalk of Mainz, a zealot of the most atrabilious cast and temper, appeared with teachings that went far beyond Augustine and made that early master of dark theology seem mild and sentimental. The vehement Gott-

² See Harnack, "The History of Dogma" and Hagenbach, "Lehrbuch der Dogmengeschichte."

schalk was unfrocked, whipped and imprisoned for his extremes of acerbity but he would not still.

The bishops were drawn into the angry turmoil. Hincmar, archbishop of Rheims, appealed for support and guidance to Johannes Scotus Erigena (Irish-born), the first of the Scholastics, who failed, however, to give the good and earnest archbishop much assistance. The teachings of the mercuric Gottschalk were discussed at the councils of Kiersy in 853, of Valence in 855, of Savonnières in 859 and by Pope Nicholas I at the Council of Metz in 863. The church had changed its temper considerably by that time and strict Augustinianism, far more an exaggeration of it, was frowned upon. A temporary drift toward free will had set in.

The old controversy recurred with Abelard and again with the great and subtle Scholastic and noble compromiser, Thomas Aquinas. Thomas taught a slightly modified and sublimated form of Augustinianism, tintured on the one hand with the increasingly popular Aristotelianism and on the other with his insistence on the "infallibility of divine causality." He was a modified determinist.

Duns Scotus, professor of theology at Oxford, regent of the University of Paris and founder of the antagonistic school of the Scotists, who fought the Thomists in season and out, arose upon the scene as Aquinas was fading therefrom. Duns Scotus, from the satiric application of whose place-name we have the term dunce, was a semi-Pelagian and a reasoner of such adroitness that his contemporaries called him *doctor subtilis*. His position was that which came to be characteristic of the Scholastics after the beginning of the fourth century. He may, indeed, be looked upon as a figure at whose feet the tide began to turn permanently away from Augustinianism, though the full ebb was still some centuries away. Duns Scotus veiled his belief in a free will under the phrase "a coöperation of freedom and grace," a logomachist expression almost too involved for the practical mind of to-day.

The Scholastics continued to babble about this sore problem throughout the fourteenth, fifteenth and sixteenth centuries but the dispute did not again flame into a great controversy until the Reformation of Luther and Calvin and the founding of the Society of Jesus. The Jesuit order, formed to combat Protestantism, soon

found itself involved in a fierce, cruel and at times bloody war within the Roman Church.

Semi-Pelagianism had little by little permeated the ecclesiastical mind and the middle of the sixteenth century found Rome, which had once persecuted Pelagius and his compromising successors, arrayed on the side of the believers in free will and the more liberal interpreters of the doctrine of grace. For good and practical reasons—such as Luther bitterly condemned—as well as out of loyalty to the reigning hierarchy, the militant brothers of Loyola took up the cudgels for the modified Pelagian doctrines. Their great doctrinaire, Luis Molina, who flourished in Portugal and Spain in the last half of the sixteenth century, attempted again to perform the feat so long and vainly attacked by the earlier Scholastics, the reconciliation of Augustine and Pelagius.³ According to Molina, predestination does not preclude the idea of free will. God knows in advance the course of events which are still contingent by means of what the Jesuit philosopher called the *scientia media*. God proffers grace and he knows before the fact what use man is to make of it. Thus He can issue His commands, predestinating as they are, without actually interfering with man's freedom of choice. The reasoning is full of mystical subtlety but Molina added a practical and to the Protestants and some others an infuriating detail when he asserted that God never fails to bestow a grace sufficient for salvation upon all who ask it sincerely. Perhaps, as charged, this was in defense of the free use or sale of indulgences and the practice of frequent communion.

The Dominicans, more rabidly than any others, fought Molina and the Spanish Jesuits on their home soil, defending the Augustinian and, even more energetically, the Thomist doctrine. The struggle grew so menacing that Pope Clement VIII commanded silence in 1594 and threatened stern punishments for any who might resume the disputation in Spain. The result was that the fight was carried into other countries, compelling the Holy See to appoint, in 1598, the *Congregatio de auxilliis Gratiæ*, which labored for nine years without accomplishing even a temporary compromise. In 1607 the sittings of the council were suspended by Pope Paul V and four

³ Consult Harnack or Molina's "Liberi arbitri cum gratiæ donis, divina præscientia, prædestinatione et reprobatione, concordia."

years later he forbade all further discussion of the questions involved. Efforts were made to enforce this decree and writings on these or related problems were sternly suppressed, but to no avail, for the controversy had already flowered forth in another quarter.

In Belgium, at the University of Louvain, Michael Baius, professor of theology and later chancellor, had become conspicuous, about 1665, by his writings in support of the revolt against scholasticism and his attacks on the ascendant doctrines of the semi-Pelagian school. His writings were condemned in 1567 by Pius V, in a papal bull and again in 1579 by Gregory XIII. Rome had then already definitely turned its back on Augustine and a good deal of Aquinas.

But the transition was not to be accomplished either by a gesture or a few decretals. In the wake of Baius arose a whole swarm of followers among whom the outstanding figure was Cornelius Jansen, eventually bishop of Ypres. Jansen again sought to revive Augustinianism in its pristine form and bolstered his writings with constant citations from St. Paul, in which direction he came perilously close to Calvinism. His teachings spread rapidly, especially in Belgium and France, attracting many distinguished followers in and out of the church. His friend, Du Vergier de Hauranne, and a disciple, Antoine Arnauld, popularized Jansenism among the French and led acid attacks on the Jesuits and their habit of "giving absolution much too easily."

Jansenism found its French center among the nuns and teachers of Port Royal, by whom Racine was educated and under whose ægis Pascal wrote his Provincial Letters, the most celebrated contribution to the great disputation. Before these were written, in 1649, the University of Paris had condemned five propositions from Jansen's *Augustinus*. All of them had to do with the questions of free will, grace and predestination. Four years later, Pope Innocent X, persuaded by a mighty array of hostile opinions from his bishops, decided that these propositions were heretical. Jansen, who was long dead, could not be affected but his followers at Port Royal now found themselves cruelly beset by the official churchmen and especially the energetic Jesuits. Arnauld engaged in a controversy with Alexander VII in which the king soon took part, with the result that the school and nunnery were broken up.

THE FALL OF PORT ROYAL

Louis XIV, soon after seizing the reins of government in 1661, began to treat the Jansenists with great rigor. All nuns who clove to Jansenism were laid under the interdict and many followers of the teacher of Louvain went to the Bastile. But in 1669 Clement IX relaxed these measures and the Jansenists of Port Royal were received into grace. For the next ten years Port Royal was undisturbed, owing to the influence of the king's cousin, the Duchess de Longueville and her brother, the great Condé. But with the death of Mme. de Longueville in 1679 the Jesuits again got the ear of Louis and the persecutions of the Port Royalists began anew. In 1705 Louis got a fresh bull of condemnation from Clement XI, and in the following spring the monastery was torn down, the cemetery obliterated and the nuns scattered among Conformist orders. Jansenism continued to hang on, in exile from France for generations, and finally expired at the time of the Revolution, though scattered communities still exist.

With the fall of Jansenism the last considerable effort to maintain predestination as a fixed dogma of the Latin church came to disaster and the tendency since then has been steadily in the opposite direction, toward a constantly broader form of Pelagianism or libertarianism. In matters of conduct and the confessional, the equiprobabilism of Liguori has become more and more the standard attitude, and in this doctrine the freedom of human choice is innate.

Protestantism, on the other hand, was clearly Augustinianism breaking away from a church which has grown intellectual, mild and full of dilettantes, interested in art and politics and wealth and power instead of evangelism. Luther and Calvin went back to the dour Augustine, with a weather eye upon that great drummer and propagandist of the Christian faith, Paul. Speaking broadly, the reformed churches rejected with some violence the sacramental theory of grace or changed it to suit their own conceptions. Luther and Calvin were both wedded to the sublapsarian doctrine, the notion that all are predestined to evil through Adam's lapse. Luther modified this belief later on and Calvin himself rejected the black Augustinian teaching that it was the heavenly intention to "save some and leave others to perish." Melanchthon, also a sublapsarian in the beginning, soon leaned the other way and became a moderate synergist—a believer in the "coöperation of grace and freedom,"

which the scholastics had tried so long and hard to rationalize, as have others since—in vain.

The dispute between Calvin and Arminius over the matter of free will or predestination forms the classic controversy on this ancient subject in the history of Protestantism. John Wesley leaned strongly toward the libertarianism of Arminius, others toward Calvin's form of Augustinianism. But, again speaking broadly, the older idea has been slowly forced into the background in all but a few Protestant denominations. It seems almost totally foreign and incomprehensible to the popular mind of this century.

Undoubtedly the ordinary conceptions now held have been influenced by later philosophy, but hardly by the materialists or mechanists. On the other hand the idealists and their successors, beginning with Leibnitz and his free monads and continuing through Kant, with his freedom of the will in the noumenal world, through Fichte, Schelling and Hegel, down to Schopenhauer, with his World as Will and Idea, even, in some sense, to Nietzsche,⁴ with his Will to Power, and finally down to Dr. Bergson and his charlatanic notion of free will in the dimension of time, have contributed heavily to the grand misconception under which the race blunders along. They have done almost as much as later religious teachers to make the will real to puzzled and distraught humanity. The modern author of inspirational twaddle and optimistic idiocies owes them a debt beyond his suspicion or comprehension.

⁴ Nietzsche was, of course, guilty of contrary attitudes, for his "The Twilight of the Idols" repeatedly denounces "free will" as an error.

APPENDIX B

A NOTE ON THE LAW

PRECISELY when men began to recognize that some of their kind were not to be considered as others, because of some helplessness, some uncontrollable vagary of conduct, is a thing still in dispute among students. In the immunities of the maniacal, the reverence with which they were sometimes treated, the superstitious dread they aroused among some peoples and certain special customs that had to do with tribal feeling toward them, we seem to sense the primitive gropings toward what has come to be a social and legal institution.

When these early ideas hardened into taboos is a matter over which investigators will still have to labor. Neither are we quite certain of the time and place of the first written laws¹ on responsibility or competence. There seem to be hints in the Babylonian tablets and surely the civilized Egyptians made some provision to cover the insane, who seem to have been numerous after the climax of the Theban empire. The Greek attitude is familiar enough to most students, but it is not until the middle period in Rome that we find our first formally classified legal definitions. Roman law recognized the *demens*, *fatuus* and *furiosus*—the demented man, the idiot and the maniac, we might translate these terms with fair accuracy. Such individuals could acquire no legal right and incur no legal responsibility, civil or criminal, because they “possessed no intelligent will.”

In the Dark Ages and in medieval times, the law took very little cognizance of the insane. Insanity was no excuse for a criminal act except under the most extreme circumstances or when the criminal chanced to be tried before some specially enlightened judge. Not only idiots and madmen were tried, convicted and put to torture and

¹ Consult Krafft-Ebing, “Lehrbuch der gerichtlichen Psychopathologie”; Fry, “Lunacy Laws”; Clevenger, “Medical Jurisprudence and Insanity”; Mercier, “Criminal Responsibility,” and many others.

death, but bears, bulls, sows, pigs and even worms were so treated. Indeed, even the bodies of dead animals were brought to trial and found guilty or innocent. The instances will be seen in any history or middle-age law and customs.

After the Renaissance the judges of Europe began to think about insanity once more, just as they slowly proceeded to rescue legal trials from the grasp of superstition, savagery and ignorance. But it was not until past the middle of the seventeenth century that the first decisions were handed down that have any bearing upon the present attitude of the law toward the insane criminal. Such decisions were given almost simultaneously by Germany, France and England, and they were, taken as a whole, to much the same effect. Since, however, the American law derives almost exclusively from British precedent, we may leave other countries aside.

Sir Matthew Hale, in the third quarter of the seventeenth century, laid down the famous rule that any person who suffered from distempers but still had the faculties of a fourteen-year-old boy was to be found guilty of treason or felony. This curious old decision must interest the psychologists of to-day who judge normal or sub-normal intellectual powers on the basis of the norm of fourteen years.

A little more than fifty years later the British law took a step backward when Justice Tracy ruled, at the trial of Edward Arnold for the shooting of the Earl of Onslow, in 1723, that insanity was no defense unless it could be shown that the defendant was "totally deprived of his understanding and memory and doth not know what he is doing, no more than an infant, than a brute or wild beast." Yet this unfortunate Arnold was surely suffering from persecution mania with paranoiac trends, for he imagined that Lord Onslow was besieging him with devils and demons and other horrible creatures, which he had invade the bedroom of the unfortunate madman at night.

At the trial of the Earl Ferrers, in 1760, for the murder of a young trustee named Johnson, the House of Lords ruled that the only allowable defense was a total and permanent absence of reason or a total temporary absence of it at the moment of committing the crime. Lord Chief Justice Kenyon somewhat softened this ruling in 1800, at the trial of Hadfield for an attack upon George III at

MANSFIELD'S DEFINITION

the Drury Lane Theater. Oddly enough, the king became mad later on.

The question to be decided, said the justice, was whether "at the very time the act was committed the man's mind was sane." Hadfield was found guilty but insane when it was shown that he had delusions. It seemed to him that he heard the voice of God commanding him to kill the king.

In 1812, at the trial of Bellingham for the murder of Prime Minister Spencer Perceval, followed by the mad prisoner's brutal execution, a still more interesting criterion of madness was laid down by Sir James Mansfield. Sir James ruled that to be sane a man must, at the time of his crime, have been able to distinguish between right and wrong, "between good and evil." Since Bellingham clearly showed the traces of moral ideas, he was adjudged sane and put to death. The facts in the case should have been clear enough to have brought an insanity verdict. Poor Bellingham had been imprisoned in Russia and gone to the British embassy with his grievance. He was not heard and no sufficient satisfaction was given him. He returned to London and began to besiege all kinds of government officials, high and low. Among others he besought Mr. Perceval, who would not hear him. Finally, in his mad rage, Bellingham conceived a murderous hatred for all government officials and stationed himself in the lobby of the House of Commons, resolved to kill the first government official who appeared. This happened to be Perceval, and it was a mere coincidence that Bellingham had once sought his aid.

The statement of the law by Mansfield in this trial was soon bitterly attacked in England and particularly in the United States, where British precedent was then being followed most closely. Leading American medico-legal authorities pointed out that many madmen have sound moral and ethical ideas on general subjects and may thus be said to know the difference between right and wrong. At the same time such persons will have no sense of guilt or conscience when it comes to killing their fancied enemies. Indeed, it is one of the common peculiarities of homicidal maniacs to be scrupulous in almost every other respect. Many a poor madman who would not steal a penny, who would shrink from any moral

delinquency and who would be totally incapable of vice, yet turns out to be a most bloodthirsty monster.

Such considerations caused American and Continental psychiatrists to form the theory of monomania, according to which human beings may be insane on a single subject or in one particular direction and sane in all other respects. This was, of course, a somewhat clumsy and stumbling approach to the truth, and it figured extensively in the forthcoming trial of Daniel Macnaughton for the murder of Mr. Drummond, the private secretary of Sir Robert Peel.

Macnaughton suffered from delusions, like Bellingham. He believed that his enemies had conspired to destroy him and he appealed to various magistrates, judges and officials for aid. These men, instead of having his sanity investigated, dismissed him as a foolish crank and let the matter rest. Macnaughton finally fastened his attention on Sir Robert Peel, the head of the government and, seeing in him the supreme personation of officialdom and tyrannical bureaucracy, Macnaughton formed the idea of killing the prime minister. Never having seen Sir Robert, the unfortunate paranoiac mistook the secretary for the chief and shot the innocent Drummond to death. This happened in January, 1843. Two months later the unhappy man was brought to trial before Lord Chief Justice Tindal, Mr. Justice Williams and Mr. Justice Coleridge. He was defended with extraordinary skill and address by Mr. Cockburn, later lord chief justice. Cockburn went back to old Matthew Hale and his seventeenth-century doctrines of relative insanity. He coupled this with the then novel theory of monomania, which he cleverly disguised so as not to give offense to legal conservatism. The result was that Lord Chief Justice Tindal instructed the jury that the question was whether Macnaughton was capable of distinguishing between right and wrong "with respect to the act with which he stands charged." Macnaughton was consequently acquitted on the ground of insanity.

The verdict caused a tumult in the House of Lords and debates followed in which the judges were criticized and finally presented with a list of five formal questions. The answers of the judges to three of the questions are of the utmost importance for they still form the basis of the legal attitude toward insanity in the United

THE AMERICAN ATTITUDE

States as well as in England and many other countries and colonies. The judges answered, in part, that:

To establish a defense on the ground of insanity, it must be clearly proved that, at the time of committing the act, the person accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong.

This famous sentence has been reworded in most of our states into the familiar phrase, "nature, quality and consequences of his act." One who does not know the nature of his act, the quality of it and, in some states, the immediate or secondary consequences thereof must be regarded as mad. But what is meant by the nature and quality of a homicidal act? This is an involved question and all the legal decisions of intervening eighty odd years have not made it quite clear, so that the matter has to be reaffirmed or re-explained by the high courts in each fresh case and in some sense left to a jury of laymen—unschooled laymen, for the most part—at each succeeding trial.

Again, what are the consequences of a homicidal act? The death of the victim and the sorrow of his family and friends? Or are the arrest, trial, imprisonment and probable execution of the killer to be ranked as consequences? Must a man, to be rated sane, have had sufficient mentality or sanity to realize not only what would happen to his victim but to himself?

The reader will not fail to see from this quandary and from the many varying decisions of the courts that the law has always found itself in a most complex and befuddling mess when it was asked to decide about insanity. The underlying reasons for the difficulty are not recondite. The law must see that its rules are sufficiently rigid and demanding to exclude the possibility of easy escape from criminal responsibility. At the same time it must make reasonable provision to see that actual madmen are not treated with brutality and punished for acts which they clearly cannot control. The fact that insanity has been little understood by medical men in the past, and still less by jurists and lawmakers, obtrudes itself here as the determining factor

So long as we believe in the deterrent effect of punishment, we

must be certain that we are not imposed upon by the scientific gentlemen. We must resist their views, hold them back from rashness, question their findings and employ the weapons of conservatism against them. And, so long as we hold to the old conceptions, this view is not unjustified. The law must make sure that no vagary of the sciolists, no fad of the sentimentalists, is imposed upon its stern austerity. Accordingly, the laws in most of our states and in most western nations still take no cognizance of anything but the violent or highly obvious forms of insanity. According to sentiment, public emotion and circumstance, the courts sometimes release or treat magnanimously those less palpably mad, but neither in legislation nor in judicial holdings have any of the other forms of mental aberration had much consideration. The utter idiot or imbecile escapes under the provision of the law which forbids the condemnation of any one unable to understand or participate in his trial, but what of the morons, the thousands who are deficient in some respects but keen enough in others, the epileptics and the scores of thousands of irresponsible emotionals? To date their only hope is the mercifulness of juries or of those having the pardoning or commuting power.

In this respect the American military law is in advance of most of our conservative states. Section 219, division G, paragraph 2,¹ reads:

"Was the accused at the time of the commission of the alleged offense so far free from mental defect, mental disease or mental derangement, concerning the particular acts charged, both (1) to distinguish right from wrong and (2) to adhere to the right?"²

We hardly need to be reminded that the question of ability to adhere to the right opens the whole problem of volition before the court and gives the tryors the right to decide in each case not only whether the accused was insane but whether he suffered from any other form of disease or defect that may have rendered him unable to control his act. Surely this is the direction which all law must take at no distant remove.

Of the older attitude no better example will be found than that of New York. In that state the penal code provides:

² Manual for Courts Martial, revised edition, 1920; effective since February 4, 1921.

INSANITY UNDER UNITED STATES LAWS

"A person is not excused from criminal liability as an idiot, imbecile, lunatic or insane person, except upon proof that, at the time of the commission of the alleged criminal act, he was laboring under such a defect of reason as either:

"1. Not to know the nature and quality of the act he was doing.

"2. Not to know the act was wrong."

In line with this statutory provision the courts have had to deliver judgments that cannot but strike the modern conscience with shivers. There was, for instance, the conviction of Bernard Carlin, a twenty-two-year-old Brooklyn youth who had killed his mother. He had spent sixteen years of his life in institutions, beginning with an orphanage and continuing through others to Elmira and Napanoch. He was, in short, one who had been formerly recognized by the legal and police powers of the state as both delinquent and deficient. Moreover, his crime had about it all the marks of feeble-minded ferocity.

Yet the Court of Appeals, held, March 2, 1909, that Carlin was not excusable unless:

"... at the time of the commission of the alleged criminal act he was laboring under a defect of reason which, furthermore, must have been such as to render him either ignorant of the nature and quality of the act he was doing, or ignorant that the act was wrong."

Less than a month earlier, in the celebrated case of Mary J. Farmer, the last woman put to death in the state (at the date of writing), the Court held:

"The jury is not required to pass upon the quality and strength of intellect or moral perceptions of a person on trial or upon the question of insanity, except as such questions affect the general question of the defendant's knowledge, at the time of the homicide, of the nature and quality of the act. A weak or even a disordered mind is not excused from the consequences of the crime."

Mrs. Farmer had killed her neighbor, Sarah Brennan, at Brownville, Jefferson County, with an ax, and had made a crude effort to hide the body in a trunk. Her motive was greed, she having attempted to get possession of Mrs. Brennan's property by means of a deed so stupidly and obviously forged as to attract immediate suspicion. The woman's statements showed trends to madness that

no court should have overlooked and she was certainly a sufferer from ideopathic epilepsy, having been subject to convulsions since her twelfth year.

This law and the decisions based on it inevitably raise the problem of right and wrong, which has tormented mankind with what cruel persistence from what remote times, and suffered shifts and changes of attitude that appall the historian or reduce him to hilarity. Seven ages of philosophers having failed to reach any tenable conclusions in the matter, the courts are still forced to speak *ex cathedra*. The smiling thought that their notions in the matter will have, to another generation, the interest of stale curiosities only, can, however, be of slight contemporary solace. It reprieves no dead men.

The most recent New York interpretation was handed down by the Court of Appeals in 1915, in the case of Hans Schmidt, the priest convicted of killing his sweetheart because maternity impended. Mr. Justice Cardozo, since then made presiding officer, noted for the bench that the lower court had ruled that wrong was to mean "wrong according to the laws of the State of New York." This, said the reviewing justices, was too narrow and, moreover, in obvious conflict with the rule that ignorance of the law is no excuse.

To show how directly our law goes back to the British, it is worth noting that Justice Cardozo, in his exhaustive opinion, cited the Macnaughton trial, and in deciding that wrong means "contrary to the laws of God and nature," he quoted Mansfield,³ which carries us back again to the Bellingham case.

Thus we stand, in most American commonwealths, as in the majority of European states, upon the limitations of our ancestors, with only the slightest concessions and lenities to console us for our backwardness.

³ Sir James, Lord Chief Justice of Common Pleas, to be sure; not the great Earl of Mansfield.

APPENDIX C

STATISTICAL

SINCE 1912 elaborate records of the patients examined or treated have been kept at Post-Graduate Medical School and Hospital and elsewhere, in the Clearing House for Mental Defectives, the Neuro-pathological Clinic and the Clinic of the Children's Court, of which one of these authors has continuously been the head.¹ The reader is asked to note carefully that only part of these patients have been delinquents or criminals. All, however, have been sufferers from mental, nervous or glandular disturbances of one kind or another, so that they have their bearing upon any general consideration of the problem of abnormal behavior.

Some fifteen thousand of these records—whose total is now about twice that number—have been worked up at this writing. That is to say, they have been classified, compared and tabulated to afford some sort of statistical material. These figures are offered here for what they are worth. They will be found suggestive rather than conclusive. They are, like all such statistics, full of unavoidable slight errors and inaccuracies. They cannot do the impossible and give a complete or representative picture of conditions and it is admitted that broader studies might upset them in whole or in part.

The greatest difficulty has been encountered in the attempt to compare the records with the census tabulations in the hope of working out general ratios. The main trouble has arisen out of the fact that the records were kept for purposes of medical and other scientific studies and not for eventual comparison with the census. This leads to practically irreconcilable conflicts because the census rests upon an artificial or political basis in the pertinent departments.

For instance, the son of Italian immigrant parents if born here is to the census an American, classified as native of foreign par-

¹ Dr. Schlapp, of course.

entage. His son, on the other hand, is an American of native stock and the government data give no account of his racial background. For scientific purposes, however, this second generation native American is still of Latin blood. Likewise, a Jew whose parents were Jewish but born in this country remains, for the student of racial trends and peculiarities, still a man of Semitic race, the factor of blood admixture being considered.

The point is that medicine is and must be interested in discovering whether some stocks are actually more subject to nervous or glandular disorders than others. It has long been the opinion of many competent psychiatrists and other students that some of the Eastern and Southern races, due to various factors, are actually more explosive, more prone to emotional troubles and less well adapted for our special and peculiar civilization—the twentieth century environment—than the more stable Northern peoples. They are believed to be more variable in the neurological sense than the Chinese or the African negroes, for instance, though less frequently afflicted by some other disease conditions. Can this be confirmed?

Again, many physicians, students, writers and investigators have held that peoples long held in subjection or dominated by others tend to become emotionally disturbed because of repressions and privations of a general kind. Similarly, it is widely believed that the people of countries frequently engaged in exhausting and protracted wars are likely to exhibit nervous symptoms because of the continued strain and killing off of the stronger males.

Finally, there is the question of the disturbance of gland balance in our immigrant mothers and the consequent birth of numerous subtle or gross defectives in the first native generation. What support of this theory, founded upon clinical experience, is to be had from the tabulated records?

It is, let it be noted again, not pretended that the tables which follow give any kind of conclusive answer to these questions. On the other hand it would be disingenuous to disregard any figures and facts which can be had and one might be charged with a willful withholding of information if such statistical material as we have were not here included. Accordingly, there is appended a set of

APPENDIX C

tables bearing on these subjects, which the authors offer with apologies for their incomplete and inconclusive nature.²

TABLE I. NATIVITY OF FOREIGN BORN

<i>Country</i>	<i>Clinic Cases</i>		<i>U. S. Census</i>	
	<i>Calendar Year to 1917</i>	<i>Cases 10,001- 15,000</i>	<i>New York City</i>	
			<i>1910</i>	<i>1920</i>
Austria	13.7	11.8	9.9	6.4
Canada	...	1.1	1.4	1.3
England	4.4	4.8	4.0	3.6
Germany	4.4	3.8	14.4	9.7
Hungary	...	4.0	4.0	3.2
Ireland	1.6	3.9	13.1	10.2
Italy	17.4	18.8	17.7	19.6
Poland	...	2.1	...	7.3
Roumania	...	2.9	1.7	1.9
Russia	48.4	37.5	25.1	24.1
West Indies.....	1.6	1.9	0.3	0.4
Scattering	8.5	7.4	8.4	12.3
TOTAL	100.0	100.0	100.0	100.0

Table No. I affords a comparison of the foreign-born patients in the records with the census proportions of the natives of the various countries of origin resident in New York City, whence practically all the patients came. The first column shows the ratios for the first ten thousand cases. The second column contains the ratios for the next five thousand cases, which are the more recent ones. The last two columns show the ratios of the censuses for 1910 and 1920. The first ten thousand cases cover roughly the period from 1912 to the end of 1917 and the second five thousand to the end of 1920.

² Statistical tables and comparisons made by Frank A. Giffin, M.A.

THE NEW CRIMINOLOGY

Table No II shows the comparative ratios in percentage points of the five largest elements in New York City according to mother tongues. Races that appear in the clinical records in statistically unimportant numbers are omitted from the table. The percentages given reveal merely the ratio that each race bears to all five races, not to the whole population and not to all the clinic cases. The census percentages were arrived at by assuming that the distribution of races among the native-born Americans of native parentage re-

TABLE II. RACE
(Mother Tongue)

<i>Race</i> (<i>Mother Tongue</i>)	<i>Clinic Cases</i>			<i>U. S. Census</i> <i>New York</i> <i>City</i>	
	<i>3,000</i> <i>10,000</i>	<i>10,001-</i> <i>15,000</i>	<i>15,001-</i> <i>25,184</i>	<i>1910</i>	<i>1920</i>
Celtic and Anglo Saxon..	22.0	20.7	17.2	27.6	22.9
Teutonic (Germanic)....	11.8	10.7	10.5	24.3	17.9
Latin	18.1	19.4	20.5	17.3	22.6
Slavic	4.7	4.7	5.2	6.2	12.2
Semitic	43.4	44.5	46.6	24.6	24.4
TOTAL	100.0	100.0	100.0	100.0	100.0

mains the same in proportion as that reported by the census among the foreign born together with the native born of foreign parents. It need hardly be stated that this is not an accurate method but merely the best available way of arriving at approximations. Some stocks do not fuse so readily as others, some are more prolific, etc. Figures bearing on this matter might be offered but they would only serve further to confuse the general reader.

Because of the fact that the patients included in the fifteen thousand cases used for these comparisons were preponderately children or minors, it has been necessary also to compute the representative age groups of native born, first generation and foreign-born residents of New York City in order to arrive at fair ratios.

APPENDIX C

TABLE III

Census Classification of Foreign White Population by Age Groups and Parentage

A—Native born, of native parentage

B—Native born, of foreign parentage

C—Foreign born

T—Totals of A plus B plus C

Age	1910 NEW YORK CITY				1920 NEW YORK CITY			
	A	B	C	T	A	B	C	T
Under 5	25.37	71.70	2.93	100.0	28.48	70.80	0.72	100.0
5-9	24.98	61.67	13.35	100.0	24.48	71.90	3.62	100.0
10-14	24.68	56.79	18.53	100.0	23.79	66.48	9.73	100.0
15-19	22.14	46.41	31.45	100.0	24.06	54.42	21.52	100.0
20-24	18.74	31.67	49.59	100.0	23.73	41.76	34.51	100.0
25-29	17.64	26.16	56.20	100.0	21.63	32.58	45.79	100.0
30-44	15.64	26.52	57.84	100.0	18.34	24.72	56.94	100.0
45-64	16.69	22.64	60.67	100.0	15.48	24.70	59.82	100.0
65 and up	21.16	9.41	69.43	100.0	19.35	14.98	65.67	100.0

The results of this distribution of the age groups will be seen by comparing the following Tables IV and V. Table IV shows the native, first native generation of foreign parentage and the foreign-born residents of New York City compared with the ratios for these classes among the first ten thousand and the second five thousand cases from the records. This table would seem to indicate a very low rate of nervous disorder among the foreign born and a very high one among the native born of foreign parents. But few foreign-

TABLE IV. PARENTAGE

Class	Clinic Cases		U. S. Census New York City	
	1 to 10,000	10,001- 15,000	1910	1920
Native	13.40	24.50	19.75	21.34
First Gen.	63.90	59.15	39.03	42.19
Foreign	22.70	16.35	41.22	36.47
TOTALS	100.0	100.0	100.0	100.0

THE NEW CRIMINOLOGY

born minors come to this country, compared to the number of adults. On the other hand, the immigrants usually have large families once they get settled here. Since there is the already noted predominance of minors among the patients, these factors must be considered and the results of this calculation will be seen in Table V.

TABLE V

PARENTAGE, COMPENSATED FOR AGE DISTRIBUTION

- A—Native born, native parentage
- B—Native born, foreign parentage
- C—Foreign born

(Details in this table are given in integral numbers, not percentage)

Age	No. of Cases	<i>Probable No. according to 1920 Census New York City</i>		
		A	B	C
Under 5	532	151.5	376.7	3.8
5-9	1,155	282.8	830.4	41.8
10-14	1,768	420.8	1,175.2	172.0
15-19	721	173.4	392.4	155.2
20-24	226	53.7	94.2	78.1
25-29	164	35.5	53.4	75.1
30-44	308	56.5	76.1	175.4
45-64	114	17.6	28.2	68.2
65 & up	12	2.3	1.6	8.1
Total	5,000	1,194.1	3,028.2	777.7
Percent of Census	100.0	23.88	60.56	15.55
Percent of Clinic Cases				
10,001-15,000	100.0	24.50	59.15	16.35

This table, it must be noted, deals only with the five thousand more recent cases, roughly, those recorded between the end of 1917 and the end of 1920. This distribution is so close to what might be expected from a random sample of the population of New York

APPENDIX C

City that one might conclude that nothing is to be concluded from the statistics. Of this more in a moment.

The first ten thousand cases are not included because age group data are not available of sufficient accuracy. The method of computing this table requires explanation. For instance, the census norm for New York City, age group from 10 to 14 years in 1920, was computed as follows: Table III shows that 23.79 per cent of the city's residents of this age group were native born of native parents. Consequently, 23.79 per cent of the 1,768 clinic cases falling into that age group (namely, 420.8), should have been native born of native parents. The other figures are arrived at in the same way.

This table, instead of showing the expected overproportion of first generation patients (native born of foreign parents), reveals them very slightly fewer than might have been anticipated. But here other factors are at work. First of all, it is the experience of hospital officials that our immigrants have, for various reasons, a suspicion, sometimes amounting to dread, of public clinics and free treatments. They usually go to physicians of their own nationality and avoid contact with our institutions wherever possible. Thus we might expect to receive fewer foreign-born children and fewer children of immigrants, proportionately, than of native-born minors whose parents are, of course, better acquainted with American conditions and procedure. The foreign and first generation children in the records here considered usually came to the clinics only when sent by the courts or by other official or charitable agencies.

Again, in making these comparative figures and ratios it was necessary to assume that a considerable number of cases where parentage and the like had to be put down as "unknown" or "not determined," would be in the same relative proportions as those where data were available. This is, however, inaccurate for most of the patients, if not all, from whom these facts could not be got were, to be sure, foreigners who could not be examined properly because of language difficulties or first generation children whose parents failed to appear or gave answers open to question. Thus the "unknown" ought to be added to the totals of these classes and not proportionally distributed.

It is, therefore, probable that a full survey, under ideal condi-

tions, would reveal a total of first-generation sufferers from the various forms of disorder indicated considerably higher than the average norm. Just how much this excess would be—how extra-prevalent such troubles are among the offspring of immigrant mothers—is a question which more exhaustive future investigations will have to determine.

In the question of the relative proneness of the various races to the conditions here treated it is also impossible to give more data, largely because the census figures do not follow the same classifications as adopted in making the records, while the various estimates of their membership given out from time to time by various patriotic societies, creed groups and the like are not to be so far trusted as to warrant their use here.

THE END

INDEX

- Abel, on isolation of suprarenal hormone, 94
- Abelard, on determinism, 294
- Acromegaly, 95
- Actuarial Society of America, 127
- Adler, on kleptomania, 214
- Adolescence, functional disturbances manifest, 190
- Adrenalin, 94
- Adrenin, 94
- Aldrich, on isolation of suprarenal hormone, 94
- Also Sprach Zarathustra*, Nietzsche, 147
- "American and Canadian Mortality Investigation Based on the Experience of Life Insurance, The," 127
- American Prison System, The*, Webb, 43, *note*
- Animal Automatism*, T. H. Huxley, 176
- Animals, anthropomorphic interpretation of behavior, 164; environmental effects on, 182; glandular activities, 183; hibernating, 182; mammals, 183; primitive fish, 173 *et seq.*; scientific experiments, 166 *et seq.*; theory of instinctive actions, 172
- Anthropomorphic theory, 164
- Apert, E., on Mongolism, 113, *note*
- Aqueduct of Sylvius, 150
- Aquinas, Thomas, on determinism, 294
- Aristotle, 54; on responsibility for crime, 16
- Arson, 45
- Aschaffenburg, on kleptomania, 214; on theories of crime, 56, *note*
- Atwell, on pituitary origin, 95
- Augustine, on freedom of action, 292 *et seq.*
- Bacon, Francis, 36
- Banditry, 45
- Banting, discoverer of insulin, 86
- Basedow's disease, 136
- Bauman, on thyroid hormone, 92
- Beccaria, C., on theories of crime, 56, *note*
- Bees, experiments with, 167; reaction to light, 186; sexual life, 182
- Behavior, emotionalism, 201 *et seq.*; external impressions, 191; glands control, 200; impulses, 191; mechanics of, 188-210
- Behaviorism, theory of crime, 27
- Bentham, J., on theories of crime, 56, *note*
- Bergson, on free will, 298; on life force, 81
- Berufsverbrecher*, Heindl, 43, *note*
- Bigamy, 58
- Biological theory, 70 *et seq.*; germ cells and heredity, 71; injury to germ plasm, 71
- Birds, cerebral creation, 175
- Blanc, L., on theories of crime, 56, *note*
- Bloch, on kleptomania, 214
- Bodily Changes in Pain, Hunger, Fear and Rage*, Walter B. Cannon, 94, *note*
- Bonger, W. A., 56, *note*; economist statistics, 61
- Bontemps, on kleptomania, 214
- Bose, Sir Jagadie Chandler, on plant reactions, 186
- Boyle, on mechanistic theory, 19
- Brain, and sympathetic nervous system, 173; defective mechanism in epilepsy, 242; degrees of development, 107; development, 169 *et seq.*; development in fish, 174 *et seq.*; importance in lower forms of life, 171 *et seq.*; in bird-life, 175; make-up of animal, 172; mechanism of, 192; prenatal disturbances, 107; prenatal retardation, 113; route of impulse, 205; sense centers, 193 *et seq.*; suspension of responses, 194 *et seq.*; (*see also* Mentality)
- Branning, Andrew, 34
- Breasted, on Egyptian history, 103, *note*

INDEX

- Brewer, Cobham, on witchcraft, 36
 Brill, Dr. A. A., alienist, 230
 Brissot de Warville, J. P., on theories of crime, 22; 56, *note*
 Burglary, 45; statistics on, 48 *et seq.*
 Butler, Samuel, on the industrial machine, 130, 285
 Bye, Raymond T., homicide statistics, 48
- Cabanis, on the ego, 81, *note*
 Calvin, John, on predestination, 294, 297
 Candolle, de, on tropism, 165
 Cannon, Walter B., on emotions and bodily changes, 94, *note*
 Carbohydrates, tolerance tests, 211, 223, 228
 Carneades, on responsibility for crime, 16
 Case histories, 137 *et seq.*; cretinism 109 *et seq.*; criminal fiends, 154 *et seq.*; defective children, 137 *et seq.*; emotional male criminals, 221 *et seq.*; epilepsy, 240 *et seq.*; feeble-minded, 156 *et seq.*; Froelich's syndrome, 137; hyperthyroid mothers, 135 *et seq.*; kleptomania, 216 *et seq.*; love crimes, 251 *et seq.*; Mongolian idiocy, 114 *et seq.*; 137 *et seq.*
 Cells, abnormal processes a cause of crime, 163; action under impulse, 205; amoeba, 86; brain (*see* separate item); chromosomes in germ, 62; colloids, 196; criminality and the action of, 101; development of functions, 169; disorders and their results, 87 *et seq.*, 189; energy storage, 196; functional process, 79 *et seq.*; importance, 77 *et seq.*; interdependence of human, 88; kinds in human body, 80; reaction norm, 197; reaction to stimulation, 178, 179; reasons for importance, 98; thresholds of functional activity, 198; (*see also* Nervous system)
 Celsus, on vivisection, 34
 Census, United States, classification, 307; dependency statistics, 121, 260; insanity statistics, 125; penal statistics, 43 *et seq.*; racial classification, 307 *et seq.*
 Chemistry, of lymph during gestation, 112; of the human body, 87 *et seq.*
 Chemotaxis, 166
- Children, 135; beginning of memory, 206; case history, 211 *et seq.*; causes of malformities, 118, 135; characteristics of mental deficient, 117; concept formations, 207 *et seq.*; cretinous, 90, 111; criminal, 211, 223 *et seq.*; deficiency causes, 143; delinquency statistics, 121-122; diseases of, 127; gland unbalance in adolescence, 190; handicapped at birth, 278; infantile symptoms of disorders, 279; maternal responsibility for, 118; Mongolian idiots (*see* Mongolism); morbidity apparent in infancy, 226; post-adolescent, 211; prenatal malformations, 72; proportion of clinic cases, 310; seduction of feeble-minded, 156; social influences, 143; theory of variation, 62; treatment of cretinous, 112
 Children of the Sun, W. J. Perry, 22, *note*
 Children's Court Clinic, New York, 73
 Christianity, and equality, 285; free will doctrines, 291 *et seq.*; Jansenism, 296 *et seq.*; original sin doctrine, 292; Pelagianism, 293; scholasticism, 294
 Chromosomes, theory of shuffling of, 62, 112
 Chrysippus, on responsibility for crime, 16
 Chrysostom, on free will, 291
 Clearing House for Mental Defectives, New York, 73, 307
 Clinic of the Children's Court, 307
 Clinics, for compulsory treatment of criminals, 268
 Cælestius, on original sin, 292
 Colloids, 196
 Comte, on positivism, 55
 Constitution, classifications, 101; debile, 101; labile, 101; stabile, 101;
 Cotton, Dr. Henry A., alienist, 230; on prenatal influence of focal infections, 113
 Courts, 276; famous decisions on insanity as a defense, 300 *et seq.*, 305; increase in number, 47; jury system outdated, 276; no power to determine sentence, 261; public safeguards, 276; United States military, 304; (*see also* Law)
 Cretinism, 92, 150; case histories, 109 *et seq.*; causes of, 98; cure possible, 109; in children, 105; temperaments in, 151; thyroid disturbances, 109; treatment, 112

INDEX

Crile, on first function, 82; on human behavior, 191; on mechanistic theory, 25, *note*

Crime, among immigrants, 144; behaviorist theory, 27; biological causes, 69; cell action and, 101; chemical causation, 163; contributory causes, 63; cost in United States, 50; determining factors in, 204; economic loss through, 52 *et seq.*; emotionalism and, 202 *et seq.*; environmental causes, 153; fear a deterrent, 273; feeble-mindedness and, 118, 145; forms, 21; gang mentality, 156; geography of, 21; glandular theory, 72 *et seq.*; hereditary, 29; increased menace, 46, 47; kleptomania, 213; literature on, 257 *et seq.*; "love," 249 *et seq.*; mechanistic theory, 25; mental deformity and, 106-107; murder (*see* separate item); necessity for revised laws, 159; not reduced by law, 288; philosophy and, 16 *et seq.*; physical causes, 29, 66 *et seq.*; poverty theory, 58, 61 *et seq.*; prenatal malformation and, 72; prevention the great remedy, 278; psycho-analyst theory, 24, 26; sex and, 214 *et seq.*; sociological causes, 69; taboos, 21; theories of, 53-74; treatment for, 265; types and their causes, 204

Crime, Causes et Rémèdes, Le, Lombroso, 64, *note*

Criminal, The, Havelock Ellis, 64; 68, *note*

Criminal Intelligence, Murchison, 57, *note*

Criminality and Economic Conditions, W. A. Bongor, 57, *note*; 62, *note*

Criminal Responsibility, Mercier, 299, *note*

Criminals, adolescent, 223 *et seq.*; ancient theories, 15; attitude toward, 14; bandits, 211; case histories, 211 *et seq.*; cure essential for release, 270; defined, 19 *et seq.*; early theories, 56; emotional, 202 *et seq.*, 211-230, 234; estimated number, 52; glandular disturbances among, 151; industrialism makes, 131; intellectual, 163; laboratory study necessary, 233; male emotional, 221; mental deficiency, 148 *et seq.*, 154; physical reconditioning possible, 267; physical types, 67; post-adolescent, 211

Criminals—*cont'd*

et seq.; potential, 282; property confiscation for certain groups, 275; punishment, 14; reformation in prison rare, 269; responsibility, 14 *et seq.*; segregation essential, 263; special emotional types, 224; temperaments of vicious, 151; two broad types, 119

Crookshank, F. G., on Mongolism, 113, *note*; 150

Crucibles of Crime, Fishman, 43, *note*

Dandy Dr., on pituitary action, 95

Dantec, le, on cell life, 169; on tropism, 165

Darwin, Charles, 19, 54, 59, 152

Deformity, brain, 106; hereditary, 106; mental, 106 *et seq.*; physical, 103 *et seq.*

Democracy, caste system preferable, 287; equality not a fact, 285

De Profundis, Oscar Wilde, 43, *note*

Dercum, on human behavior, 191

Der Zellenbau der Grosshirnwinde des Affen Macacus Cynomolgus, 194, *note*

Descartes, on modern scientific thought, 18, 36

Determinist theory, 17, *note*; 164

Development of American Prisons and Prison Customs, Lewis, 40, *note*

Diabetes, causes of, 86; results of treatment, 97

Didier, on kleptomania, 214

Die Entwicklung der Strafe, Steinmetz, 43, *note*

Die Erkrankungen der Blutdrüsen, Wilhelm Falta, 101, *note*

Disease, Basedow's, 136; children's, 127; crime and, 29, 36, 268; causes of increased mental, 129; Froelich's syndrome, 137; murder and, 231-256; not hereditary, 117; phobias, 247

Donkin, Sir Bryan, on feeble-mindedness among criminals, 147

Donna Delinquente, La, Lombroso, 64, *note*

Drugs, action on nerve cells, 197; addiction among criminals, 255; crime and the use of, 234; peddling of, 282

Duboisson, on kleptomania, 214

Ductless Glandular Diseases, The, M. K. Meyers, 101, *note*

- Dwarfs, Egyptian kings and, 103; supposed powers of, 104 *et seq.*
- Economist school, social injustice, 284; theories of crime, 58 *et seq.*
- Education, need for general, 280; reform, 69-70
- Egyptian Art*, Maspero, 103, *note*
- Eimer, on animal instinct, 180
- Electrotaxis, 166
- Ellis, Havelock, on control of future generations, 103; on Lombroso, 64
- Embezzlement, statistics on, 48 *et seq.*
- Emotionalism, 201 *et seq.*; imperative actions, 245 *et seq.*; instability of criminals, 155; instability of feeble-minded, 155; love crimes, 201 *et seq.*; jealousy, 248 *et seq.*; periodic disturbance in women, 215; response to cell action, 206; scientific meaning, 209; special types, 224 *et seq.*
- Encephalitis, 194 *et seq.*
- Encyclopedia Britannica*, 126, *note*
- Encyclopedie der philosophischen Wissenschaften*, G. W. Hegel, 41, *note*
- Endocrine glands, 29; abnormal activity effects, 91; chronic over-activity in women, 216; control of behavior, 200; cretinism and the, 109 *et seq.*; disturbance during pregnancy, 112; external stimulation, 91, 191; functional disturbance, 189; important, the, 90; interdependence of, 88, 199, 224; nature of, 88; periodic disturbances in women, 134 *et seq.*; pre-menopause disturbances, 115; soundness essential to normality, 209; source of epilepsy, 243; toxic action, 91; treatment for emotional disturbances, 217 *et seq.*
- Energy, storage in cells, 196
- Engels, F., on theories of crime, 56, *note*; 58
- England, insanity increase, 126; number of punishable crimes, 39; penal methods, 33 *et seq.*
- Environment, a cause of crime, 59; influence on criminals, 204; theories of crime, 59 *et seq.*, 70, 153, 207 *et seq.*, 267
- Epilepsy, 234; a cause of crime, 66; ancient theories of, 236; case histories, 240 *et seq.*; causes of, 108; emotions of victim, 242; general kinds, 236 *et seq.*; preliminary disturbances, 241; psychic equivalent,
- Epilepsy—*Cont'd*
238; symptoms, 241; unexpectedness of attack, 240
- Epinephrin, 94
- Epiphenomenalism, 99
- Epiphysis (*see* Pineal gland)
- Eppinger, on gland classification, 100
- Eroticism, crimes due to disordered, 249 *et seq.*; effects of frustration, 249 *et seq.*
- Ethnologische Studien zur ersten Entwicklung der Strafe*, Steinmetz, 31, *note*
- Eugenics, 280
- Eunuchoidism, 150
- Evolution of Animal Intelligence*, The, S. J. Holmes, 171, 182
- Executions, public holidays, 40
- Fabre, Pierre, 33, *note*; on animal instinct, 180
- Falta, Wilhelm, on glandular diseases, 101
- Feeble-mindedness, among criminals, 234; ancient attitude toward, 299; and crime, 118, 145, 151 *et seq.*; contrasts in development, 153; dangerous increase of, 159; easy suggestibility, 156; lack of inhibition, 155; low-wittedness, 150; prenatal causes, 107 *et seq.*; prevention, 160; recognized types, 149-150; sexual abnormalities, 155; treatment, 160; when hereditary, 149
- Feminism, and homicide among women, 250 *et seq.*; results of, 131 *et seq.*
- Ferri, E., on theories of crime, 56, *note*
- Fichte, on free will, 298; on life force, 81
- Fish, experiments on, 173 *et seq.*
- Fluere, anemone experiments, 170
- Forced Movements, Tropisms and Animal Conduct*, Loeb, 167, *note*, 183
- Forel, on kleptomania, 214
- Fraenkel, on isolation of suprarenal hormone, 94
- France, pre-Revolution punishment, 39; school of criminology, 56
- France, Anatole, on mentality of criminals, 153
- Frazer, Sir J. G., on totemism, 22, *note*
- Free will, 13-29; fallacy of theory of, 177 *et seq.*; origin of theory, 185; religious teachings on, 291 *et seq.*; vicissitudes of, 291 *et seq.*

INDEX

Freud, on kleptomania, 214
 Froelich's syndrome, 92, 137, 150, 151, 237; transmission of, 151-152
 Fürth, von, on isolation of supra-renal hormone, 94

Galen, on vivisection, 34
 Galton, Sir F., on theories of crime, 56, *note*

Galvanotropism, 166

Ganglia, functions, 194; inflammation and its effects, 195

Garafalo, R., on theories of crime, 56, *note*

Geotaxis, 166

Germany, registration bureaus, 283; school of criminology, 56

Germ plasm, and heredity, 152; injuries and their effects, 108 *et seq.*

Giffin, Frank A., statistical tables, 309

Gigantism, 150

Glands, antocoid, 89; chemical discharges, 88 *et seq.*; disturbances cause criminality, 145; endocrine (*see separate item*); extracts of, 220; hormone (*see separate item*); importance in diagnosis, 100; interdependence, 94, 99; reasons for importance, 98; transference and its effects, 89; types of disturbance, 98

Glandular theory, pregnancy changes, 72

Glover, Professor J. W., on mortality figures, 129

Goddard, Dr. H. H., on feeble-mindedness among criminals, 148

Godwin, William, on causes of crime, 58

Goiter, 112; and pregnancy, 105; cretinism and result of, 90; early knowledge of, 89; prevalence of, 89; transmitted to children, 105

Gonads (*see Sex glands*)

Goring, Dr. Charles, in rebuttal of Lombroso, 66; on feeble-mindedness among criminals, 148

Gottschalk, on original sin, 293

Griffiths, Major Arthur, in rebuttal of Lombroso, 66

Gross, on kleptomania, 214

Gynophobia, 188

Haeckel, germ plasm theory, 152

Hale, Sir Matthew, on insane criminals, 300, 302

Hardy, Thomas, quoted, 257

Healy, Dr. William, on feeble-mindedness among criminals, 148

Hegel, on free will, 298; on legal punishment, 41

Heliotropism, 166

Henley, William Ernest, 13

Heredity, and crime, 70; cretinism and, 111; diseases not due to, 117; feeble-mindedness, 149; germ plasm injuries, 152; glandular disturbances and, 190; mental deformity, 106; theories of, 59 *et seq.*, 106, 112, 149

Heredity, J. Arthur Thomson, 71

Hess, on gland classification, 100

History of Dogma, Harnack, 293, *note*

History of Egypt, Breasted, 103, *note*

History of English Law, Pollock and Maitland, 277, *note*

History of Miracles, Cobham Brewer, 36

History of Penal Methods, George Ives, 18, *note*; 35, *note*; 37

History of the Apostles, Pierre Fabre, 33, *note*

History of the Harlequinade, Maurice Sand, 104, *note*

History of Trial by Jury, Forsyth, 277, *note*

Hobbes, on value of words, 28

Hoffman, Dr. F. L., crime statistics, 48, *note*

Hohenheim, Theophrastus Bombast von (*see Paracelsus*)

Holbach, D', on causes of crime, 58

Holmes, on frog reactions, 175; on insect instincts, 171

Homme Machine, L', de Lamettrie, 19

Homosexuals, among women, 216; kleptomaniac tendencies, 214; literature on, 220; male, 214; surgical progress, 220, 221

Hormones, and functional activities, 198; chief potency of, 89; effect on temperament, 97, 150; influence in instincts, 183 *et seq.*; selective action, 116, 224; (*see individual glands*)

Hoskins, on gland transference, 89

Hospitals, central detention, 261; free children's, 279; reconstitution, 248

Howard, John, on segregation of criminals, 263

Hugo, Victor, on dwarfs, 104

Hume, David, on phenomenalism, 19

Huxley, T. H., on free will, 19; on frog reactions, 176

Hydrocephaly, 150

- Idiocy, cretinous, 92, 112; Mongolian (*see* Mongolism); theory of origin, 90; (*see also* Mentality)
- Immigrants, crime among children, 144; mothers, 308
- Impressions, 191
- Impulses, 191 *et seq.*; activating, 193; subliminal, 197
- Incest, 58
- Industrialism, and homicide among women, 250 *et seq.*; and mental deficiency, 133; effects on mothers, 284; effects on the race, 119 *et seq.*, 128 *et seq.*; efficiency and health, 285
- Infantilism, 150
- Influenza, Spanish, during gestation, 114
- Inhibition, lack of, 216, 219
- Insanity, 18; ancient attitude toward, 299; and purposive action, 231 *et seq.*; causes of, 108; commitment, 45; forms of, 122; general increase, 126; increase in ratio, 120-121; New York State decisions on, 305; New York State statistics, 125; obvious forms, 234; probable amount of feeble-mindedness, 122; statistics on, 121-122; United States census figures, 125; (*see also* Feeble-mindedness)
- Instincts, animal, 171 *et seq.*
- Insulin, 86; glandular effects, 97
- Insurance, statistics, 128 *et seq.*
- Intelligence quotient tests, 107, 123; among criminals, 211; (*see also* Mentality)
- Interstitial glands, selective activity, 199
- Invalidism, 251
- Inventions, and their results, 130
- Ives, George, on penal methods, 18, *note*; 34-35; on solitary confinement, 42; on witch burning, 37
- James, William, on kleptomania, 214
- Jansen, Cornelius, on free will, 296
- Jerome, on free will, 292
- Johnson, Samuel, on free will, 179, 211
- Jolly, H., on theories of crime, 56, *note*
- Josephus, Flavius, on human responsibility, 291
- Joyce, William B., on embezzlement losses, 48
- Jukes, *The*, R. L. Dugdale, 61, *note*
- Jukes family, 61
- Jung, on kleptomania, 214
- Jury system, vagaries of, 45
- Juvenal, on goiter prevalence, 89
- Kammerer, germ plasm theory, 152
- Kant, on free will, 298
- Kasidah, The*, 155, *note*
- Kellogg, Vernon L., on sense-reactions, 167 *et seq.*
- Kendall, on thyroid hormone, 92
- Kenyon, Lord Chief Justice, on insanity as a defense, 300
- Kersten, on kleptomania, 214
- Kidnaping, 45
- Klaatch, H., on Mongolism, 113, *note*
- Kleptomania, 27; authorities on, 213; case histories, 216; early theories, 215; glandular unbalance causes, 213; homosexuals, 214; men, 214; women, 214
- Koelsch, Dr. Adolph, on thyroid gland in mammals, 183
- Krafft-Ebing, on kleptomania, 214
- Labor, division of, 132
- Laboratories, research, 262, 280
- Lamarck, on inherited habit, 180
- Lametrie, de, on mechanistic theory, 19
- Langdon-Don, Dr., on Mongolism, 113, *note*
- Law, American criminal, 306; American military, 304; basis of modern criminal, 18, 30-53; compulsory registration and examination, 279; crime legislation, 257, 260, 268, 270; definition of insanity in crime, 303 *et seq.*; medieval criminal, 299; mistaken theories of crime, 231; not a crime deterrent, 288; obsolete criminal, 159; origin of present criminal, 300; program for crime, 261 *et seq.*; ranking of murderer, 234; revision of criminal necessary, 159; Roman criminal, 16, 31
- Lehrbuch der Dogmengeschichte*, Hagenbach, 293, *note*
- Lehrbuch der gerichtlichen Psychopathologie*, Krafft-Ebing, 299, *note*
- Leibnitz, on free will, 298
- Leppman, on kleptomania, 214
- Letulle, on kleptomania, 214
- Lewis, Burdette G., 230
- Liberi Arbitri*, Molina, 295
- Libertarianism, 17, *note*; 23, *note*
- Life, animal intelligence, 165; as reaction, 165 *et seq.*; scientific experiments, 166 *et seq.*; theories of,

INDEX

- Life—*Cont'd*
 164; tyrannous power of nature, 169; vertebrate, 173
 Lillie, F., glandular experiments, 183
 Literatures, classical, 15; criminological, 257 *et seq.*
 Little's disease, 150
 Liver, 97; location, 91
 Lock, R. H., on heredity and crime, 71
 Loeb, Jacques, on animal conduct, 183, 185; on human behavior, 191; on involuntary responses, 165 *et seq.*
 Lombroso, Cesare, 163; on criminal anthropology, 54 *et seq.*; theories of crime, 64 *et seq.*
 Longevity, 127
Lunacy Laws, Fry, 299, *note*
 Luther, Martin, on cure for insanity, 36; on the doctrine of grace, 294, 297
 Lynching, 45
- Macrocephalism, 150
 Mammals, associative memory, 176; brain in lower orders, 176
 Man, constitutional types, 101; contrasting reactions, 188; fallacy of free mentality, 177 *et seq.*, 180; intelligent actions, 177; interest in malformed, 104 *et seq.*; nature of life, 164; power of inference, 177; teleologic background, 180; types of abnormality, 188; volition, 165
Man—An Adaptive Mechanism, Crile, 25, *note*; 82, *note*
 Manouvrier, L., on theories of crime, 56, *note*
 Mansfield, Sir James, on what constitutes sanity, 301, 306
Man's Judgment of Death, Lewis E. Lawes, 53, *note*
Manual for Courts Martial, 304
 Marbold, on kleptomania, 214
Martyrdom of Man, The, Winwood Reade, 22, *note*
 Marx, Karl, on causes of crime, 56, *note*; 58
 Maspero, on Egyptian art, 103, *note*
 Mean, Dr. P. B., alienist, 230
 Mechanistic theory, 84, 298
Medical Jurisprudence and Insanity, Clevenger, 299, *note*
 Medicine, progress in study of crime, 232, 286; racial researches, 308; treatment for undesirables, 283; treatment of criminals successful, 267
- Memoirs of a Revolutionist*, Kropotkin, 43, *note*
Memorials of Milbank, Griffiths, 43, *note*
 Memory, beginnings in infant, 206; concept contrasts, 207 *et seq.*; loss during epileptic seizure, 244
 Men, case histories, 211 *et seq.*; emotional criminals, 221 *et seq.*; emotional defectives, 224 *et seq.*; epilepsy among, 241; homosexuals, 214 *et seq.*, 221; idlers, 281 *et seq.*; kleptomaniac types, 214; parasites, 281 *et seq.*; sex crimes among, 250
 Mendelism, 59
 Menopause, 215; childbirth during pre-, 115; glandular disturbances, 115
 Menstruation, gland overactivity during, 215 *et seq.*; results of irregular, 220
 Mentality, Alpha test, 123, 148; appalling increase in deficient, 120; characteristics of deficient, 117; crime and deficient, 118, 154; decrease in average, 286; "defective," 107; "deficient," 107; deformity affecting, 107; degenerate, 244; degrees of abnormality, 107; differences in subnormal, 107; feeble-mindedness (*see* separate item); forms of deficiency, 150; intelligence quotient tests, 107; Mongoloid deficient, 115 *et seq.*; test during World War, 122; treatment of deficient, 117; types in city gangs, 156
 Metabolism, disturbed, 218; influences affecting, 94, 95
 Meyers, M. K., on glandular diseases, 101, *note*
 Microcephalism, 150
Microscopic Structure of Cortical Areas in Man and Some Mammals, 194, *note*
 Minkiewicz, on functions of nerve ganglia, 172
Missouri Crime Survey, The, 258, *note*
 Molina, Luis, on free will, 295
 Mongolism, 150; case histories, 114 *et seq.*, 136 *et seq.*; causes of, 114, 136; characteristics of, 113; due to thyroid deficiency, 116; nature of, 113; pluri-glandular affliction, 113; pre-menopause children, 115; temperaments in, 150-151; theories of, 116; treatment, 113-114
 Monist theory, 164

- Monomania, 302
 Morbidity, in infancy, 226
 More, Sir Thomas, on causes of crime, 57
 Morons, among criminals, 148 *et seq.*; case histories, 157; characteristics, 156, 235
 Mothers, cretinous children and, 90; deformity in children, 113; early and late endocrine disturbances, 116; effects of industrialism, 284; emotional shocks during pregnancy, 118; environmental influences, 143; glandular disturbances, 117, 189; goiter effects, 105, 112; immigrant, 308; prenatal influences, 112 *et seq.*, 131; reasons for Mongolian children, 115 *et seq.*; responsible for healthy offspring, 118, 133; (*see also* women)
 Motion pictures, emotional effects, 223
 Munk, experiments with mammals, 176
 Murchison, Professor Carl, on criminal mentality, 148
 Murder, and disease, 231-256; by epileptics, 236, 242 *et seq.*; four main groups of homicides, 234; increased ratio, 48; passionate, 249; unpremeditated, 248
My Life in Prison, Lowry, 43, *note*
 Myxedema, 116, 198
 National Academy of Sciences, 123
 National Commission for Mental Hygiene, 125
 National Surety Company, 48
Nature, De la, J. B. R. Robinet, 19, *note*
 Nervous system, action of drugs on cells, 197; cell functioning, 83; action of gland chemicals, 199; action of suprarenals on, 94; cerebro-spinal, 175; complicated mechanism of human, 178 *et seq.*; constant strain on, 130; degrees of cell disturbances, 247; development, 176; energy conversion, 196; functional disturbance, 189; ganglia activity, 172 *et seq.*; importance in lower forms of life, 170, 172; number of cells in human body, 200; origin, 170; prenatal retardation, 113; spinal, 175; sympathetic, 173; threshold of functional activity, 190 *et seq.*, 246 *et seq.*; thyroid action on, 93, 99; vegetative, 100; (*see also* Cells)
 Neuropathological Clinic, 307
 Neuroses, gland disturbances cause, 100
 New York State, annual prison commitments, 52; insanity in penal code, 304; insanity statistics, 125
 Nietzsche, on free will, 31, 298; on mentality of criminals, 153
 Origen, on free will, 291
 Owen, on causes of crime, 58
 Pancreas, 97; Langerhans islands, 85, 98
 Paracelsus, on cretinism, 105; on the origin of idiocy, 89; vindication of, 112
 Parathyroid glands, 87; location, 91
 Parole system, 46
 Pascal, on Jansenism, 296
 Peckham, E. G., on wasps, 180 *et seq.*
Peculiarities of Behavior, Dr. Wilhelm Stekel, 27
 Pederasty, 282
 Pelagius, on freedom of action, 292 *et seq.*
Penal Servitude, W. B. N., 43, *note*
 Penal system, ancient, 32; annual cost, 51; collapse of, 30-53; inadequacy of, 53; medievalism, 32
 Penn, William, prison system, 39
 Perry, W. J., on crime and religion, 22, *note*
 Pestalozzi, H., on theories of crime, 56, *note*
Philosophie Zoologique, 180
 Philosophy, and the crime problem, 16 *et seq.*
 Phototaxis, 166
 Pigmy, ancient interest in, 103
 Pineal glands, chief function, 96; location, 90; selective activity, 199
 Pituitary gland, chief interest in, 96; criminal effects of disturbances, 151; dispituitary types, 98; effects of disturbance, 95, 96; formation, 94; influence on cells, 95; interdependencies of with other glands, 96; location, 90; selective activity, 199
 Pituitrine, 95
 Plants, reactions of, 186
 Plato, on responsibility for crime, 16
 Pliny the Younger, 231; on causes of goiter, 89
 Poison, 29; action during pregnancy, 115; plant reaction to, 186; sexual toxicosis, 214

INDEX

- Poison Mysteries in History, Romance and Crime*, C. J. S. Thompson, 34, *note*
- Porencephaly, 150
- Post-Graduate Medical School and Hospital, 73, 109, 111, 157, 307
- Poverty and crime, 58, 61 *et seq.*; United States statistics, 62 *et seq.*
- Pregnancy, 189; emotional disturbance during, 118, 215; environmental influence, 143; glandular disturbances 117, 189; prenatal influence, 112 *et seq.*, 131
- Principles of Psychology*, Herbert Spencer, 163
- Prisoners of St. Lazare, The*, 43, *note*
- Prison Memoirs of an Anarchist*, Berkman, 43, *note*
- Prisons, authorities on barbarisms of, 43; average population, 44, 52; "coddling" unknown, 275; control boards as safeguard, 272; early, 38; increased capacity, 47; medieval, 39; new conception, 261; new scheme called for, 265; reformation of convicts rare, 269; revised parole system, 272; scientific segregation unknown, 264; schools of criminality, 264; solitary confinement a failure, 264; supervised release system, 271; term variation, 44; trained staff needed, 265
- Probation system, 46
- Program for penal law, 257-288
- Prohibition, effect on crime, 46
- Prudential Insurance Company of America, 48
- Psycho-analysis, connection between sex and crime, 214; theory of crime, 24, 147
- Psychology, mob, 40
- Psychoses, 29
- Punishment, ancient methods, 33; as a crime deterrent, 40 *et seq.*, 53, 303 *et seq.*; basis of, 31; confinement, 40; forms, 42; probation, 46; theoretical effect of, 30, 31; trial systems, 32
- Rape, 45, 58
- Rascals, regimentation of, 281 *et seq.*
- Reaction, action and, 163-187; associative memory, 176; complexity of human, 178; compound reflexes, 177; conditional reflexes, 177; contrasts under frustration, 188; grades of, 165; in lower forms of life, 165 *et seq.*; invariable process
- Reaction—*cont'd*
in all life, 179; plain reflex, 176; simple reflexes, 177; vertebrate, 174
- Reade, Winwood, on changes in crime theory, 22
- Recent Progress in the Study of Variation, Heredity and Evolution*, R. H. Lock, 71
- Reflexes, nerve ganglia, 171
- Reform system, present, 69
- Registration, central bureau, 279, 283; compulsory, 279, 283
- Reickert, Dr., on pituitary action, 95
- Religion, aboriginal, 21; and the new criminology, 67; Christianity (*see separate item*); crime percentages, 56-57; Greek, 15; Hebrew, 31
- Research, crime laboratories, 262, 280
- Responsibility, problem of, 14 *et seq.*
- Rheotaxis, 166
- Robertson, on isolation of tethelin, 95
- Robinet, J. B. R., on free will, 19
- Roger of Palermo, on treatment of goiter, 89
- Roosevelt, Theodore, 180
- Rousseau, Jean Jacques, on causes of crime, 57; on equality, 285
- Russian and French Prisons*, Kropotkin, 43, *note*
- Sadism, 247; mass, 259
- Saprophytes, 282
- Schelling, on free will, 298
- Schopenhauer, on free will, 298
- Science, cell reaction to external stimuli demonstrated, 178 *et seq.*; conditional reflexes in fish, 174 *et seq.*; involuntary response demonstrations, 166; nervous system experiments on lower life, 170; old theories exploded, 180; reflex action in lower forms of life, 171 *et seq.*; sense-reaction experiments, 167; phylogenetic theory, 173; theory of life as reaction, 164 *et seq.*
- Scotus, Duns, on free will, 294
- Secrets of the Prison House*, Griffiths, 43, *note*
- Segregation, not a cure, 283
- Select Library of the Nicene and post-Nicene Fathers of the Christian Church*, 292, *note*
- Seneca, on mentality of criminals, 153

- Senility, 127; causes of, 97
- Sensationalism, criminal, 209; degrees of disturbance, 209; instability of, 209; popular interpretation of, 209
- Senses, brain centers, 193 *et seq.*; organs, 83 *et seq.*; psychic blindness, 193
- Sex, and murders, 249 *et seq.*; biological differences, 132; connection with crime, 215; functions, 132 *et seq.*; homosexuals, 214; kleptomania and, 214; perversion and crime, 215; sadism, 247; single-moral-standard doctrine, 250; toxicosis, 214 *et seq.*
- Sex glands, effects of interstitial hormone, 96; formation, 96; function, 96; interstitial types, 98 *et seq.*; Leydig cells, 94; overactivity in women, 215; periodic disturbance in women, 215 *et seq.*
- Shakespeare, 36; on dwarfs, 104
- Shaw, Bernard, on mentality of criminals, 153
- Smith, G. Elliot, on murder, 22, *note*
- Socrates, 32; on mentality of criminals, 153; on responsibility for crime, 16
- Some Insect Reflexes*, V. L. Kellogg, 167
- Sophocles, on mentality of criminals, 153
- Souvenirs de la Maison des Morts*, Dostoievsky, 43, *note*
- Spencer, Herbert, on cell growth, 79; on mind, 163, 164
- Statistics, clinic cases, 309 *et seq.*; computation methods, 313; general dependency, 121; insanity, 124 *et seq.*; mortality, 128; on feeble-mindedness, 121; penal, 43 *et seq.*; poverty in United States, 62
- Steinach, glandular experiments, 183; on distribution of sex cells, 221; on senility, 97
- Steinmetz, on punishment, 31
- Stekel, Dr. Wilhelm, on behaviorism, 27; on kleptomania, 214; on sexual toxicosis, 214
- Stereotropism, 166, 167
- Sterilization, 280
- Stockerd, on toxic action on germ plasm, 106
- Sugar, metabolism of, 94
- Suprarenal glands, 93, 219; abnormal types, 98, 101; excessive activity, 199; functional influence, 94; hormone forms, 94; location, 90; psychic action, 94
- Suprarenin, 94
- Surgery, on homosexuals, 221
- Taboos, 21
- Takamini, on isolation of suprarenal hormone, 94
- Tarde, G., on theories of crime, 56, *note*
- Taxis, 165, 177
- Tethelin, 95
- Thermataxis, 166
- Thigmotaxis, 166
- Thompson, C. J. S., 34, *note*
- Thomson, J. Arthur, on heredity, 71
- Thymus gland, 97; location, 91
- Thyroid gland, abnormal functioning, 199, abnormal stimulation and its results, 93; abnormal types, 98 *et seq.*; and cretinism, 109, 113; deficiency causes Mongolism, 116; formative influence, 92 *et seq.*; goiter (*see* separate item); hyperthyroid types, 98; hypothyroid types, 98; in mammals, 183; location, 90; malformations, 111 *et seq.*; periodic disturbance in women, 215
- Tilney, on pituitary formation, 95
- Times*, London, 34
- Timme, Dr. Walter, alienist, 230
- Tindal, Lord Chief Justice, on insanity as a defense, 302
- Totemism and Exogamy*, Sir J. G. Frazer, 22, *note*
- Tractatus politicus*, Spinoza, 188
- Tracy, Justice, on insanity as a defense, 300
- Trauma, 29
- Triplett, experiments with fish, 174, 175
- Troglodyte, 154
- Tropism, 165, 170, 177, 185
- Truancy, 227
- Tuke, on insanity, 18, *note*
- Twenty-fifth Man, The*, Morrell, 43, *note*
- Twilight of the Idols*, Nietzsche, 298, *note*
- Tyburn prison, 40
- Über die Ortssihen Verschiedenheiten der Grosshirnwinde*, Schlapp, 194, *note*
- Über Differenzen im Bau der Hirnrinde*, 194, *note*
- United States, annual cost of crime, 49 *et seq.*, 260; army test results,

INDEX

United States—*cont'd*

121 *et seq.*; census classification, 307; corporal punishment, 39; cost of dependents, 120, 286; development of prisons, 39; general dependency statistics, 121, 260; insanity statistics, 125; military law, 304; penal statistics, 43 *et seq.*

Uomo Delinquente, L', Lombroso, 64, *note*

Utopia, Sir Thomas More, 57

Vegetable life (*see* Plants)

Vertebrates, primitive fish, 173

Volition, 165

Voltaire, 38; on free will, 19

Walton, anemone experiments, 170

War, emotional instability due to, 221

Wards of the State, Hopkins, 43, *note*

Wasps, food hunting, 181

Weismann, germ plasm theory, 152

Wesley, John, on witchcraft, 37

Whitman, Professor, on stereotropism, 167

Will (*see* Free will)

Witchcraft, 36 *et seq.*

Women, chronic overactivity of glands, 216; emotional disturbances, 215; epilepsy among, 237; industrialism and, 131 *et seq.*; homicides among, 250 *et seq.*; kleptomaniacs, 215; periodic glandular disturbances, 134 *et seq.*; potential criminals, 282; (*see also* Mothers and Pregnancy)

World's Famous Prisons, 43, *note*

Wunderlich, on human constitutions, 101

